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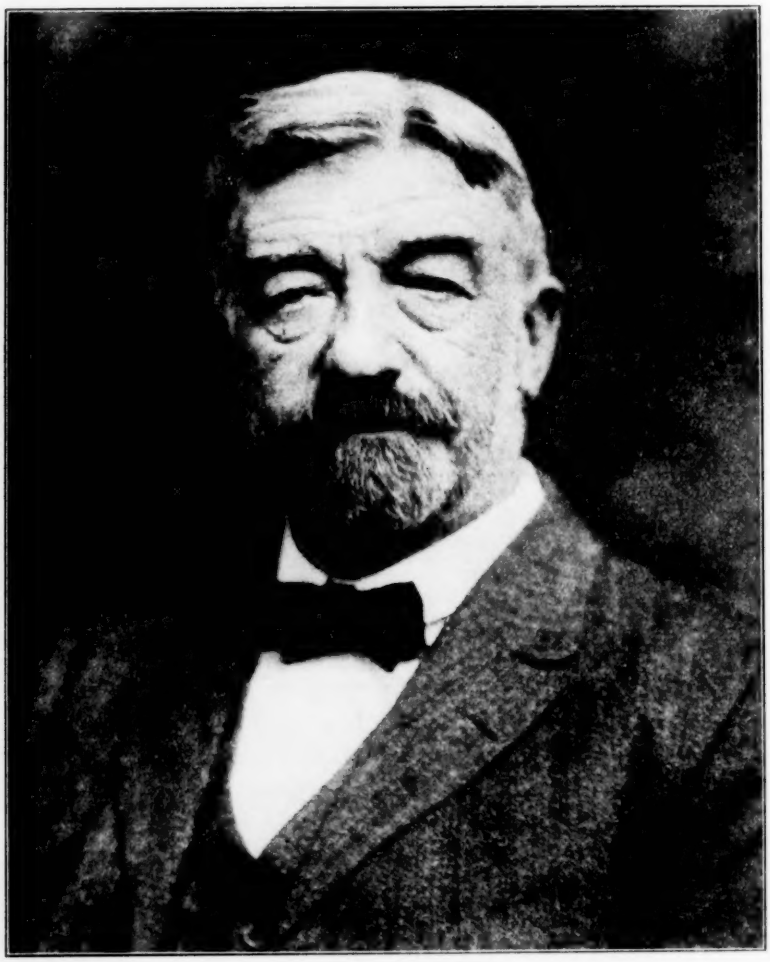
CHARLES HOLZHAUER

NEWARK, N. J.

President-elect American Pharmaceutical Association



CHARLES HOLZHAUER

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

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CHARLES HOLZHAUER.

President-elect Charles Holzhauer, of Newark, N. J., was born in Cassel, Germany in 1848. When three years old he came to this country with his parents who settled in Newark, and here the subject of the sketch has resided ever since. Both of Mr. Holzhauer's parents died before he had reached the age of twelve years and, therefore, he was largely thrown on his own resources early in life.

He was engaged for a short time in a factory before his employment, in 1862, with Dr. Marsh who was then proprietor of the drug store now owned by Mr. Holzhauer, therefore, he has been located in business continuously at this same place for upwards of fifty-four years. Prior to entering the drug business, Mr. Holzhauer had attended the public schools in Newark, and was also given further opportunity of attending school while engaged with Dr. Marsh. Later he matriculated at the New York College of Pharmacy and was graduated from that institution in 1872. Dr. Marsh sold the drug store in 1870 to W. A. Conover and the latter conducted it until 1880 at which time Mr. Holzhauer bought a half interest and in the following year became sole proprietor. Mr. Holzhauer was a member of the first New Jersey Board of Pharmacy and also served as its president. In 1881 he was elected president of the New Jersey Pharmaceutical Association. He was trustee of the New York College of Pharmacy from 1892 to 1897 and vice-president in 1891.

Mr. Holzhauer joined the American Pharmaceutical Association in 1873 and has been a regular attendant since, usually accompanied by Mrs. Holzhauer. He was first vice-president in 1905 and at the last meeting was local secretary and also chairman of the Historical Section. Mr. Holzhauer's life has been a success in every way, not only is he highly respected as a citizen and pharmacist but his success in business has made it possible for him to become interested in quite a number of financial institutions of his home city.

EDITORIAL

E. G. EBERLE, Editor 253 Bourse Bldg., PHILADELPHIA

A WISH FOR THE NEW YEAR

AN association is a union of individuals for doing collectively what unassociated individuals cannot accomplish. The power and influence of an association represents the total power and influence contributed by individual members.

The basis and backbone of an association is the quality of membership, and the quality is determined not only by numbers, although that is important, but by the personal and affirmative work and interest of every member in support of the purposes for which the organization exists. The successful organization, therefore, depends primarily upon the individuals composing the membership and not, as many hold, upon the officers. The function of the latter is primarily, though not wholly, to carry out the instructions of the former. The functions of officers are usually clearly stated and only within these defined limitations have officers the initiative. Power and initiative are resident in the great body of members from which they must emerge to be translated into actions and proceedings through established parliamentary practices and channels. One member, therefore, has as much power, as many privileges and rights as another, but also as many corresponding duties. Too many members feel that their duties are met when they pay their dues. But what are dues for? They are for maintaining the agency through which the wishes and needs of the members are to be carried out, but too many members fail to express their wishes. Often the officers are expected to discern these wishes and execute them and thus perform functions belonging entirely to the membership body. Of the membership of the A. Ph. A., as of that of every other association, too large a proportion is passive and indifferent to the aims and purposes of the association. The justified presumption is, therefore, that they acquiesce in whatever is done by the rest, but an association belongs to and is for each and every member. That not all exercise the rights and duties of their proprietorship-in-common is perhaps a compliment to those who do exercise these privileges, but any association is strong or weak according, on the one hand, to the number of members who are constructively active and affirmative, or, on the other, indifferent or acquiescent.

Now, my most earnest and sincere wish is that all those members who have heretofore been satisfied with what the rest did, take a more active and helpful interest in the affairs of the Association; that they will attend in increasing numbers the annual meetings; that they will become more and more conscious of, and exercise, their proprietorship in the Association; and that by their added strength and coöperation they will augment the already traditional upward influence of

the Association to the end that with unified effort and accomplishment of all of the members the grand old A. Ph. A. will acceleratingly influence upwardly the development of the pharmaceutic body in the years to come.

To all the members I send heartiest greetings and the best wishes that I am capable of for a successful pharmaceutical year. I wish all might have a vision of the possibilities that are inherent in our Association and the determination to bring about a realization of this vision. By united, coöperative and sympathetic work undreamed-of things can be realized. Our work should and must be more constructive and upward in the future, not because it has not been sufficient in the past but because of the greater requirements and obligations of the present and the future. A few cannot do these things—all must put their shoulders to the wheel.

FREDERICK J. WULLING, *President.*

OUR ASSOCIATION.*

WITH the beginning of another year our thoughts may well linger for a while with the American Pharmaceutical Association and its work, so that our enthusiasm may enliven a determination to increase the numerical strength and influence of the organization. A hopeful attitude intensifies the power of our influence; passivity is an impossible antagonist.

An association, when properly activated, when the members work together for a common purpose, presents great possibilities. The individual in an undertaking may not be able to produce desired results that are easily accomplished by the energy of hundreds or thousands. Coöperation has been compared to the drops of water of the Niagara. Each drop is insignificant in its individual energy, one drop of the same potency as the other, but together form the greatest power of the continent, because every drop is working. The individual can do comparatively little, but together, the many, by trying and working together, not only may, but will accomplish much. The secret then of progress is to bring as many members into the Association as possible.

The individual member too often says, my efforts amount to little, when he ought to consider that he is part of the organization, and no one in it more influential than he. There are perhaps others who imagine themselves the more important, though they are not; in order to achieve, they must have the coöperation of every other member. Usually this thought is not well founded; we need to know each other better; in the analysis it will be found that every member in reality has the success of the Association at heart, and when any one seemingly assumes an attitude of greater importance, it is simply an evidence of the enthusiasm within. The enthusiast should not be discouraged but those who have willingly permitted others to do their work should join the "anvil chorus."

* This editorial was written before President Wulling's message was received.

The growth and value of the Association is dependent upon the work of the members, their knowledge of, and faith in, the mission of pharmacy. Faith in the results to be accomplished by the Association must be accompanied by potential, persistent energy, and coördination and coöperation are essential to all successes. The problems of pharmacy and medicine are solved by votaries meeting on common ground of faith, work and scientific thinking. Without activated thought there can be no progress. The members must consider themselves as the Association. The progress of pharmacy would be more satisfactory if a larger percent of the votaries had a firmer belief in its mission and if they realized the need of, and exemplified, coöperation. Coöperation that does not extend beyond the limits of the pharmacy or certificate of membership in the Association has little value.

The wonderful progress of the medical profession is not only due to the higher education demanded by medical institutions, but by and through the fact that physicians have impressed the laity with their valuable service, that they are as willing to teach the methods of preventing diseases as treating them. So also the dentists have awakened to their opportunities and apprised the public of the value of their services. In all of this work pharmacists have shared, but they have not acquainted the public with their part of the service. We cannot expect to legislate ourselves into independence nor survive in isolation; we must educate the public to recognize the value of our services.

The progress of the medical profession is largely due to the building up of a numerically strong organization. The stronger the American Pharmaceutical Association becomes the greater will be the achievement of pharmacy, and the way to build up the Association is by united endeavor.

We have passed into another year; 1916 has given us a new Pharmacopoeia and National Formulary, and the credit of their construction is largely due the members of the American Pharmaceutical Association. This is not the work of one year, but the result of continued study, and while the past year marked the completion of the present revisions, these make it possible to improve the next. The A. Ph. A. Recipe Book is under way and will further evidence the usefulness of the Association.

The Association is active in assisting and formulating legislation that will serve the public, based on rational thought. This endeavor alone should be sufficient to enlist the support of pharmacists everywhere. Then the coördination of state association work is assuming shape, and with the proper interest will be helpful to pharmacists in all states and aid them in utilizing proven plans.

The drug business has had its difficulties in a commercial way, but they have been met, and in summing up, the advantages gained have probably balanced the disadvantages, for many who had never before realized that their margin of profit was not sufficiently large, advanced their prices. Other drugs have taken the place

of those unobtainable and may be the impetus for establishing a materia medica, the supply of which will never again be as seriously interfered with as during the recent years.

We should think of the past as an experience given; whatsoever the experiences have been, they will profit us, provided we are willing to learn their lessons; we should not think of them as fixed guides, however, but rather as vanes, showing us direction, and if we are not satisfied, change them. E. G. E.

THE VALUE OF THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION TO AMERICAN PHARMACY.

THE completion of another volume of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION suggests that something should perhaps be said relative to its progress.

The publication of the *Proceedings* and of the JOURNAL was never considered in the light of a financial investment, but as necessary for the recording of transactions of the Association and of pharmaceutical work. The change to the JOURNAL was made because the papers of Association contributors would be printed earlier, and if they desired to add to this matter during the year, the opportunity was open, or if related work had been undertaken by others, this might also be submitted and thus a greater value be derived. The plan was not an original one of the American Pharmaceutical Association, but in this thought the lead of pharmaceutical associations in other countries and related organizations in this country was followed.

In the first issue of the JOURNAL, Dr. J. H. Beal, then editor of this publication, presented these thoughts:

"The JOURNAL is not an object but an instrument. The American Pharmaceutical Association does not exist for producing the JOURNAL, but this publication has been brought into existence to serve the necessities of the Association.

"The several branches of pharmacy very properly have their separate associations and organs: the American Pharmaceutical Association aims to represent pharmacy as a whole, and as a grand division of human vocations, it acknowledges a duty to every legitimate subdivision and to every individual connected therewith, and professes to afford a forum where all may have a fair hearing and be judged according to the evidence and the argument. The American Pharmaceutical Association may be termed the clearing-house of pharmaceutical opinions and affords every branch of pharmacy the opportunity to present its own views and to advocate its peculiar policies. The same will be true of its official organ, and the editor will as readily print the views of those who do not agree with him as of those who do, provided they are in other respects of sufficient merit to warrant the use of space required and free from offensive personalities."

In an address the writer named the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION a catalyst in the sense that it reacts by contact. The application is, the JOURNAL is something helpful for the activities of those whose interests the publication serves. While in a way the JOURNAL may stimulate new thought, direct attention, it is a means, and this has been provided by the members of the Association, so that their investigations and conclusions may be promptly transcribed and studied for application and for utilization in the promotion and betterment of pharmacy. The fact remains that the JOURNAL is a creature of the Association, and this must be recognized not only by those who have the publication in charge, but by those who created it. The editor might desire to shape the JOURNAL according to his individual views, but if these did not harmonize with the activities and thoughts of the membership, the publication would become feeble and a product of conceit. The management must recognize the will of the Association, and be subject to its direction. The JOURNAL is shaped, therefore, by the opinions of the membership, either directly or by reaction.

It is impossible to disconnect the JOURNAL from the Association, for whatever is said of it applies in a degree to the "Record of its transactions." No one disputes the value of the work done by the members of the American Pharmaceutical Association, their papers present investigations on subjects that are directly concerned with pharmacy and their reports bring to the attention of pharmacists, whether affiliated or not, practical methods which have proven profitable and advantageous and even essential to their business. Certainly the story of business conduct from buying and manufacturing to exploitation and sale, told by experienced and successful men has intrinsic value, so also information relating to magistral pharmacy. All of these reports, largely original matter, come to the attention of retail pharmacists through the JOURNAL. Thus the JOURNAL serves the members as an advisor, an instructor, a guide, a time-saver, a reference, each issue of which bears the messages of one pharmacist to another, yea going further, and with the spirit of altruism disseminating the knowledge of discoveries and investigations of the contributors into every pharmacy.

The Association represents pharmacy as a whole, a grand division of human vocations; its sections have a helpful relation one to another, they are links of a chain or segments of a circle. Occasionally the charge is made that the American Pharmaceutical Association is not of value to the retail pharmacist, the discussions and papers are of a character that are not serviceable to them. First of all, the Association is what the members make it. Even the members sometimes fail to realize how far wrong the impression is, that the matter offered in the JOURNAL does not serve the every-day pharmacist. A survey of the papers printed in the JOURNAL during any given year will very quickly controvert the assertion of impracticability for the pharmacist. Fully 75 percent of the papers are directly

concerned with his work. Practically all of the papers read before the Scientific Section are concerned with drugs or preparations of them. The very fact that every branch contributing to the drug business is represented here has developed the Sections and made the sum total of the work accomplished and reported by the Association of inestimable worth to the pharmacist. But he obtains this information so easily, so cheaply, that he expects more, and after all, *dissatisfaction* is essential for inciting progress.

The preliminary reports of the Pharmacopoeia and National Formulary and now of the A. Ph. A. Recipe Book are printed in the JOURNAL and thereby every pharmacist has a voice in the perfection of these authorities. The great value of the JOURNAL is in that it is owned and controlled by representative American pharmacists. The JOURNAL is plastic, the members are the molders, the activities of pharmacy shape it; in it are presented not only the different opinions of pharmacists relative to the same subject, but their coördinated views on every subject concerning pharmacy. The members give testimony, and read that given by others, and also pass judgment. They themselves produce the JOURNAL and it is this representative character that gives the publication value and exemplifies pharmacy to the non-member, because the American Pharmaceutical Association is the recognized representative of American pharmacy. The great value of the Association is that the members profit by the results of their coördinated and coöperative efforts, and the JOURNAL provides a record for their reference and study.

It must be remembered that the JOURNAL is in no sense a competitor of the excellent publications devoted to the various drug interests, indeed its object is to be helpful to them, work with them, and their reciprocity is entitled to commendation. They are deeply interested in the welfare of the Association. The JOURNAL is above all the official organ of the American Pharmaceutical Association. Whatever income may be provided simply enables the JOURNAL and the Association to broaden out in their activities.

While the JOURNAL may never become a paying financial investment, there has been a growth from year to year in the receipts of the publication, and in the year past these have amounted to 50 percent over that of the next highest preceding year, and the cost of production somewhat less. The members can be helpful by expressing their appreciation to advertisers, and by their patronage repay these friends for their coöperation.

The opportunities of the JOURNAL can be increased, and the harmonious cooperation of the members is invited to that end, as one of the means of helping the American Pharmaceutical Association. The JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION can be made a power for the greatest good of American pharmacy. Will you help?

"IT CAN'T BE DONE."

Somebody said that it couldn't be done,
But he, with a chuckle, replied
That maybe it couldn't, but he would be one
Who wouldn't say so till he had tried,
So he buckled right in, with the trace of a grin
On his face; if he worried, he hid it.
He started to sing as he tackled the thing
That couldn't be done—and he did it.

Somebody scoffed, "Oh, you'll never do that!
At least no one has ever done it."
But he took off his coat, and he took off his hat,
And the first thing we knew he'd begun it;
With the lift of his chin, and a bit of a grin,
Without any doubting or quiddit,
He started to sing as he tackled the thing
That couldn't be done—and he did it.

There are thousands to tell you it cannot be done;
There are thousands to prophesy failure;
There are thousands to point out to you, one by one,
The dangers that wait to assail you;
But just buckle in with a bit of a grin,
Then take off your coat and go to it;
Just start in to sing as you tackle the thing
That "can't be done"—and you'll do it.

—*Life and Action.*

E. G. E.

RESPONSIBILITY IN FRIENDSHIP.

There is great responsibility in friendship. We are apt to forget that we owe much to a friend who comes into our life. We like to be cheered and stimulated ourselves in the companionship of congenial friends, but we do not always think what we may be to them, what they may be looking for, waiting or hoping for; just a word of cheer, or sympathy, or encouragement, or, it may be, a word of counsel. We are often too self-absorbed to see what they want, or, perhaps, we are selfishly indifferent, provided we have been pleased and cheered ourselves. Truly, we are not fit to be a friend until we realize responsibility in friendship. The essential thing is to be a friend.—Mrs. Frank Learned.

STEPS IN THOUGHT.

Observation, comparison, deduction and trial the success or failure of which inspires and directs further observations which form the starting point of a new and wider cast of his net into the sea of the unknown, these are the successive steps in the discipline of thought which has slowly and inevitably led man from helpless dependency on the caprice of nature to the present day when his words travel with the speed of light and his instruments pierce the depths of interstellar space.—T. Brailsford Robertson.

SCIENTIFIC SECTION, AMERICAN PHARMACEUTICAL ASSOCIATION

PHYTOCHEMICAL NOTES.*†

From the Laboratory of Edward Kremers.

81. The Oil of *Pinus sabiniana*.

BY ROLAND E. KREMERS.

That the oleoresin of the Digger's pine of California does not, upon distillation, yield a turpentine oil but a product that bears resemblance to some of the lower fractions of American petroleum was observed during the seventies of the past century.[1] That it might be used for similar purposes as those to which petroleum benzine had been put is indicated by the trade name "erasine" under which, for a time, it appeared in the California market.

The identity of the bulk of this oil with normal heptane was established physically by Thorpe[2] in 1879, and chemically by Schorlemmer and Thorpe[3] in 1882. That the oil contains substances other than heptane, though in but small amount, is indicated by its odor and by the synonym "aurantine," under which it likewise appeared in the California market. Whereas the striking occurrence of heptane, as a product of a conifer, attracted the attention of chemists to this hydrocarbon, the one or two percent of non-heptane constituents of the oil are of equal interest to the phytochemist. Rabak[4] in 1904 endeavored to ascertain something about these other constituents but did not have sufficient material at his disposal to identify any of them. Hence, when a larger amount became available, this was one of the first problems to suggest itself for at least a partial solution.

The physical constants for normal heptane, so painstakingly determined by Thorpe for the hydrocarbon obtained from the Digger's pine, are possibly among the most accurate on record for a hydrocarbon of the methane series. However, if one stops to consider that the hydrocarbon so carefully investigated physically by Thorpe had an optical rotation of about 6.9′ it becomes apparent that it could not have been absolutely pure. Normal heptane should be optically inactive.

* The publication of these notes, which has been interrupted for several years, is herewith resumed. Since the publication of the revised list (JOUR. A. PH. A., 2, 724), the following numbers have been published in this Journal:

1912

73. R. C. Roark, "Oil from Mentha citrata," JOUR. A. PH. A., 2, 839.

78. R. C. Roark, "An Unusual Oil of Wormwood," JOUR. A. PH. A., 2, 841.

79. O. A. Beath, "Oleoresin of *Pseudotsuga taxifolia*," JOUR. A. PH. A., 2, 303 and 1566.

80. O. A. Beath, "A Crystalline Resin Acid from *Pinus sabiniana*," JOUR. A. PH. A., 2, 303 and 1569.

† Read in abstract before Scientific Section, A. Ph. A., Atlantic City meeting, 1916.

[1] Wenzel, Am. Journal of Pharmacy, 1872, 92.

[2] Chem. Soc. Journal, Trans., 35, 296.

[3] Annalen, 217, 149.

[4] Pharm. Review, 25, 212.

The slight angle of rotation can readily be accounted for by assuming that in the collection of the oleoresin, the collector did not discriminate sufficiently between the *Pinus sabiniana* and other species of pine yielding pinene, *e. g.*, *Pinus ponderosa*.[5] That such mistakes have been made has since then been demonstrated repeatedly. Thus, *e. g.*, an oleoresin from Jeffrey pine, which likewise produces heptane in place of pinene, contained about one-third or more of the oleoresin of *Pinus ponderosa* with which this species is readily confounded by the workmen. This oleoresin was distilled and the oil examined in this laboratory by R J Harnon.[6] In like manner the admixture of a pinene oleoresin with the oleoresin of *Pinus sabiniana* has since then been observed in the Forest Products Laboratory.[7] Hence, with an unusually pure heptane at our disposal it seemed highly desirable to redetermine the physical constants and to compare them with those of Thorpe.

The chemical identification of heptane from Digger's pine by Schorlemmer and Thorpe involved the repetition of Schorlemmer's classical experiments on the constitution of the methane hydrocarbons. The chlorination, esterification, saponification and oxidation experiments involved, ought to find a place in the laboratory courses for organic chemistry. Though chlorine substitution is mentioned in the textbook as one of the characteristic reactions of the methane hydrocarbons, yet not a single laboratory manual calls for this experiment for the simple and sufficient reason that no sufficiently pure hydrocarbon of this series has thus far been available. With the availability of heptane, it seemed desirable to work out the conditions under which the experiments referred to above could be made laboratory exercises in elementary organic chemistry.

The three problems thus indicated are those, the partial solution of which has been attempted. Well-nigh innumerable other problems in organic, physical and analytical chemistry and even in chemical technology, that are suggested by the possible supply of heptane on a commercial scale, cannot here be considered, but may receive consideration later.

The present report, however, deals only with the distillation of the oil and its fractionation. Already work has been done on the purification of the heptane thus obtained and the redetermination of its physical constants. These, together with the physical constants of heptane prepared from Jeffrey pine, will be made the subject of a separate report. Work has also been done on the higher boiling oxygenated constituents of both oils. The results of this work, which may point the way to an understanding of the genesis of the heptane in these pines, will also appear in a separate report. Finally, it may be pointed out that part of the work done by O. A. Beath on the resin acids of Digger's pine has already been reported (see Phytochemical Notes, No. 80 in JOUR. A. PH. A., 2, 1569). Further reports on this work may be expected.

Material.—The material used in this investigation was obtained in January, 1913, through the kind coöperation and liberality of the Forest Products Laboratory at Madison, Wisconsin. It consisted of fifteen five-gallon cans of oleoresin of Digger's pine or *Pinus sabiniana*. The oleoresin was obtained by boxing and

[5] "Oleoresin of Some Western Pines," Bull. 119, Forest Service.

[6] See letter of C. Stowell Smith to E. K.; also lab. notes of R. J. H.

[7] Personal communication.

was collected in the Sierra National Forest, Cal.[8] Some of the cans were labeled "second grade," one "poor grade." The assumption is that the remaining cans were to be considered as first grade.

The oleoresin as received was a viscous semiliquid.

Distillation of the Oleoresin.—This was distilled during the week beginning December 29, 1913, in the 60-liter Lentz still of the Chemical Laboratory. The distillation was effected by passing steam into the oleoresin as well as into the jacket of the still. The oil separated rapidly from the water of the distillate and a rough separation was effected by means of a separatory funnel. The oil from each can was united, but kept separate from the rest. The aqueous distillate was reserved for cohobation. The contents of one can were found to make a convenient charge. Five cans was the maximum amount handled in a seven-hour day. When the volatile oil about ceased to distil, the distillation was stopped, the residue allowed to settle, whereupon the water rose to the surface and was largely decanted into the cans. The resin, while hot, was emptied into wooden boxes and upon further cooling solidified.

After an interruption in the work, the cohobation of the aqueous distillate was commenced on February 2, 1914. About forty liters were emptied into the still as a single charge. Steam was passed into the water only until distillation had begun whereafter the heat from the jacket alone sufficed. When the aromatic odor of the distillate became somewhat less pungent, distillation was stopped and the residue discarded. In this manner about 45 liters of first cohobate were collected. These were again cohobated and the first 8 to 10 liters collected. At first the distillate was milky, later it cleared with a slight separation of an oil on the surface. This oil was collected separately.

The following table records the description of the crude material, the amount of oil obtained, and the density of the oil at 20° as determined by means of a Mohr-Westphal balance:

Expt.		Description of oleoresin.	Amount of oil.	Sp. gr. at 20°.
1	Dec. 29	"Second grade"	1750 Cc.	0.6861
2	Dec. 29	"A"	2090 Cc.	0.685
3	Dec. 30	"A"	2300 Cc.	0.685
4	Dec. 30	"A No. 5"	2390 Cc.	0.685+
5	Dec. 30	"A No. 5"	2240 Cc.	0.685+
6	Dec. 30	"A No. 4"	1950 Cc.	0.685
7	Dec. 30	"A No. 5"	2500 Cc.	0.685+
8	Dec. 31	"A No. 3"	1875 Cc.	0.685
9	Dec. 31	"A No. 3"	2170 Cc.	0.685
10	Dec. 31	"A No. 4"	2725 Cc.	0.685
11	Jan. 2	"A No. 2"	2415 Cc.	0.686
12	Jan. 2	"A"	2440 Cc.	0.685
13	Jan. 2	"No. 8, second grade"	1110 Cc.	0.685
14	Jan. 2	"No. 7, second grade"	1725 Cc.	0.685
15	Jan. 2	"Poor grade"	1451 Cc.	0.685
Total			31,131 Cc.	

Assuming the total weight of oleoresin approximately to have been 600 lbs., the average yield of oil may be assumed to be approximately 7.8 percent. The

[8] See letter from C. Stowell Smith to E. Kremers, Dec. 2, 1912.

best yield (Expt. 7) on the same assumption is 9.4 percent, the poorest yield (Expt. 13) 4.2 percent. A comparison of these yields with those obtained by previous investigators is afforded by the data recorded in the following table:

Investigator.	Yield.
Rabak[1]	7.3 percent
Schorger[2]	11.4 percent
R. E. K.[3]	7.8 percent

FRACTIONATION OF THE OIL.

With the exception of the small amount of oil obtained by the cohobation of the aqueous distillates, all of the fifteen oils obtained by the steam distillation of the oleoresin were united and fractionated by steam. For the greater part of the distillation the heat of the steam jacket sufficed. The residue was driven over by passing steam into it, hence was distilled with water vapor and the oil thus obtained separated in the usual manner. The bulk of the oil, distilled by itself, was collected in liter fractions, thirty-one such fractions, all colorless, being obtained. Fraction 32 consisted of about 100 cc. of a mobile yellow oil of an agreeable odor and was obtained by separation from the aqueous distillate as already indicated. In the following table these fractions and their densities, as determined with the aid of a Mohr-Westphal balance, are recorded:

Fraction.	Sp. gr. at 20°.	Fraction.	Sp gr. at 20°.
1	0.6835	17	0.684
2	0.684	18	0.684
3	0.684	19	0.684
4	0.684	20	0.684
5	0.684	21	006845
6	...	22	0.684
7	...	23	0.684
8	...	24	0.685
9	0.684	25	0.685
10	0.6835	26	0.6845
11	0.684	27	0.685
12	0.684	28	0.685
13	0.684	29	0.685
14	0.684	30	0.685
15	0.684	31	0.7081
16	0.684	32	0.8300

The densities recorded above show quite clearly that most of the fractions consisted of relatively pure heptane. Practically all of the material obtained has been utilized in a variety of experiments. As already indicated, several fractions were purified and used for a redetermination of the physical constants. A considerable number were used in chlorination experiments and the subsequent conversion of the chlorides to acetates of the corresponding alcohols. Still others were used as solvent in a variety of phytochemical investigations.

Finally, it may be mentioned that the presence of an aldehyde in the highest fractions has been indicated by the formation of its sodium acid sulphite addition product. Reports on all of these aspects of the work will follow later.

THE COLLECTION OF MATERIAL FOR THE CLINICAL LABORATORY.*

BY J. ATLEE DEAN.

An outline of proper methods for the collection of specimens, also an effort to impress the necessity of delivering material that will reveal the real conditions.

That the laboratory is an indispensable adjunct to the modern practice of medicine must be admitted. The bacteriologist is able to identify and accurately label morbid processes. The various tests enable one to verify and make positive diagnosis. Unfortunately, the amount of assistance that the laboratory can render is often curtailed by the lack of skill and caution with which the specimen is procured, and very often the reputation of the worker is placed in jeopardy by the want of knowledge of the one who collects the material. The conscientious physician of to-day cannot protect those who depend upon him for life and health, except he uses the laboratory; yet, the laboratory is worthless to the man who fails to get a specimen that will reveal the real condition.

The authors[1] of one of our textbooks on bacteriology begin the chapter on the bacteriological examination of material from patients, with the following remark: "In making bacteriological examinations of material taken from patients the validity of results is as fully dependent upon the technique by which the material is collected, as upon the proper manipulation in the later stages of the examination." This is indeed a true statement, appreciated by a small part of the medical profession and worthy of consideration by the pharmacist. It is apparent, without discussion, that the collector of a specimen should make use of his scientific knowledge in obtaining the material; nevertheless, the few remarks presented are of timely interest.

URINE.

Two fluid ounces are sufficient to send to the laboratory. If examined in a reasonable time, or in cool weather, no precaution, other than collection in a clean bottle, is necessary for chemical and microscopical examination. When urine is sent a long distance, more especially in warm weather, the writer suggests the use of a small piece of gum camphor. Many other preservatives have been recommended, among which may be mentioned chloroform, solution of formaldehyde, salicylic acid, and thymol. Chloroform preserves the specimen well from a chemical standpoint, but renders the sediment unfit for microscopical examination, and gives a deceptive precipitate with Fehling's solution. The addition of a few drops of formaldehyde solution has been suggested but it may cause the reduction of the copper solutions, which may be taken for glucose; it also distorts and shrinks the casts and cellular elements. Salicylic acid renders the tests for indican with Obermayer's reagent more difficult, as well as the diacetic acid reaction, giving a coloring with the iron salts in these reagents. The most convenient preservative

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* Read before Scientific Section, A. Ph. A., Atlantic City meeting, 1916.

for the patient to obtain is camphor, which is sufficiently efficient. Therefore this is recommended.

Saxe[2] is responsible for the statement that the best time to obtain a sample of urine when we do not want the twenty-four hour quantity, is during the day, about three hours after a meal. The reason for this is that the morning urine, which is commonly collected, is least likely to contain slight amounts of albumin, or glucose.

The collection of urine for a bacteriological examination is a different matter and the specimen must be so collected as to avoid contamination with extraneous organisms. In women the proper method is catheterization. In men this is rarely necessary. The glans penis and meatus are thoroughly washed with soap and water, then with diluted alcohol (50 percent); the first portion of urine voided should be rejected, and the last portion collected in a sterile receptacle. Care is necessary, as many cases of colon infection reported are no doubt due to careless technique.

Not only infections of the urinary tract can be detected from examination of a carefully collected specimen of urine, but also infections of the throat, heart, and joints. In rheumatic conditions the joints should be massaged before the urine is obtained. It is much easier to culture urine than blood, and a bacteriological examination of the urine may give us the desired information and furnish the organisms for an autogenous vaccine.

SPUTUM.

Many specimens of sputum sent to the laboratory consist entirely of saliva or, more frequently, of secretions from the nasopharynx. It should be insisted that the sputum be raised by a pulmonary coughing act. The morning specimen should be collected in a clean wide-mouth bottle, corked tightly and the outside washed with alcohol or phenol solution.

PUS.

Pus, for microscopical examination, may be spread upon a glass slide and allowed to dry in the air. For the preparation of an autogenous vaccine the material may be collected upon a sterile swab, placed in a sterile tube and sent at once to the laboratory. Soap followed by alcohol or ether should be used for cleansing the surfaces of boils or abscesses before puncturing them for material, never phenol or mercuric bichloride, which kills the organism or prevents its growth.

GASTRIC CONTENTS.

The test meal usually recommended is the Ewald breakfast, consisting of two slices of dry toast and two cups of weak tea, or preferably water. After one hour the meal is extracted. The meal must be taken on an empty stomach. The first thing in the morning the patient may be instructed to take the test meal at home and report for the extraction in less than one hour after eating it.

BLOOD.

Blood, for the Widal test, may be collected by allowing a couple large drops to dry upon a slide or piece of glazed paper.

Blood, for a differential count or examination for malaria parasites, may be spread upon a glass slide as described by Stitt,[3] who credits the method to Daniels, as follows: "Take a small drop of blood on the end of a clean slide, touch a second

slide about a half inch from end with the drop, and as soon as the blood runs out along the line of the slide-end slide it at an angle of 45° to the other end of the horizontal slide." The blood is pulled or drawn behind the advancing edge of the advancing slide.

It is usual to receive the blood for malaria test after a chill, although Wood[4] claims it is not necessary to obtain blood for the purpose of making a diagnosis of malaria at any particular time in relation to the chill, because if the patient has the disease the parasites will always be found if sufficient care is taken in searching for them, excepting only in the blood of persons to whom quinine has been administered and in some cases of black water fever when the parasites may not appear in the peripheral blood.

Blood for culturing, either for vaccines or diagnosis, should be taken from one of the large veins at the flexure of the elbow. Mallory and Wright[5] state that about 10 Cc. of blood should be taken and distributed directly by means of the syringe in quantities of 3 or 5 Cc. among flasks, each containing 200 to 400 Cc. sterile bouillon. The blood is thus highly diluted in order to obviate its bactericidal action. The strictest aseptic precautions must be observed in obtaining the blood and in mixing it with the culture medium.

When blood is wanted in quantities, as for the Wassermann and other serum tests, when desired, I furnish the Keidel tube together with instructions for obtaining the blood by venipuncture. This is not necessary as 3 mils of blood are sufficient and can easily be obtained from the fingers as described by Kolmer:[6]

(1) Wash the last joint of the middle finger with alcohol. If the hand is cold it should be warmed by immersion in hot water; before puncturing, compress the finger and squeeze in such a manner as to drive the blood toward the end of the finger.

(2) Prick deeply with a broad blood lancet, Hagendorn needle or scalpel across the lines of the skin.

(3) Collect blood in small test-tube, as blood may be lost on the sides of a large tube.

Sufficient blood can be obtained in this manner, and patients do not object to frequent tests when treatment is being guided by serum reactions. To obtain blood from small children the large toe may be punctured in the same way.

CONCLUSION

The methods for the collection of material most often sent to the clinical laboratory have been given here. Those collecting material or advising the patients should never lose sight of the importance of proper collection.

In closing, I would recommend that the laboratory worker be frequently consulted, as to how he wishes the material collected and delivered to him, so that the value of the laboratory be increased and patients receive larger benefits at the hands of those in whose keeping they have placed their life and health.

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A RAPID ACCURATE METHOD FOR THE DETERMINATION OF ORGANICALLY AND INORGANICALLY COMBINED IODINE.*

BY WILLIAM J. THOMPSON AND J. PAUL SNYDER.

Recently, while investigating the different methods for organically and inorganically combined iodine, it occurred to the writers that the iodine might be liberated by suitable oxidizing agents and advantages taken of its solubility in chloroform. Upon further examination of the subject, we found that other investigators had used several oxidizing agents, *viz.*, potassium permanganate, nitric acid, etc., while several had used sodium nitrite. As far as we were able to ascertain, all reported inaccurate results when assaying products containing iodine, by methods based upon the above reactions. The principal cause of error which they reported was caused by the reagents used to liberate the iodine, being carried mechanically into the chloroform, or being slightly soluble in the latter, thus interfering with the final titration. Nowhere to our knowledge, has anyone used hydrogen peroxide for liberating the iodine. We, therefore, decided to try out this substance, and accordingly we made several determinations upon different compounds containing iodine. The first thing we discovered was the necessity of the presence of a free acid in the solution of sample. We found upon investigation that acetic acid appeared to be the most desirable for this purpose. After several determinations it was evident that the iodine was liberated only slowly by this method, and at times it was difficult to ascertain if the iodine was completely liberated, which led to varying results. It was obvious to us that we must obtain a more rapid and complete oxidation. After experimentation with many different substances, we found that the addition of a small amount of phosphoric acid overcame this difficulty. The following methods have been in use in our laboratories in the past year, and our experience with them has been perfectly satisfactory.

TINCTURE IODINE—U. S. P.

Tincture of iodine, made according to the U. S. P. formula, should contain 70 Gm. of iodine, and 50 Gm. of potassium iodide in each liter. The U. S. P. VIII has appended an assay process for determining the free iodine, but does not include any method for the estimation of the potassium iodide. We have successfully applied the following method for the estimation of both the free iodine and the potassium iodide, using only one sample. Both determinations may be performed in from twenty minutes to one-half hour, according to the speed of the analyst.

METHOD.

Five mils of the tincture are pipetted into an Erlenmeyer flask of a hundred mils capacity and the free iodine estimated by the usual thiosulphate method. The contents of the flask are then transferred to a separatory funnel of 250 mils capacity. Acidify with 10 mils of acetic acid, add 10 mils of hydrogen peroxide

* Read before Scientific Section, A. Ph. A., Atlantic City meeting, 1916.

and 5 mils of phosphoric acid. The whole is carefully mixed by a whirling motion of the funnel and the liberated iodine is shaken out with successive portions of 25 mils each of chloroform. The last portion should not show a pink color indicating that the free iodine has been completely exhausted. The chloroform extractions are collected into a second separatory funnel containing 100 mils of distilled water. In order to free the chloroform from any free acid that may have been dissolved by the chloroform, or carried through mechanically, the contents of the funnel are shaken. After complete separation of the liquids the chloroform solution is drawn off and again washed with 100 mils of distilled water, care being taken that no free iodine is left in the wash water. The chloroform is transferred to a 500-mil flask containing 100 mils of distilled water, the whole thoroughly shaken and if the aqueous layer still shows an acid reaction, a small portion of sodium bicarbonate is added and the flask again shaken. After complete separation, 20 mils of a 10 percent solution of potassium iodide are added. $\frac{N}{10}$ sodium thiosulphate solution is run in from a burette in small portions, and the flask shaken vigorously after each addition. When the chloroform layer shows only a faint pink color a few drops of a starch solution are added and the titration continued, drop by drop, until no blue color persists. From the total number of mils of $\frac{N}{10}$ sodium thiosulphate solution consumed in the latter determination, are subtracted the number of mils consumed in the estimation of the free iodine. The remainder multiplied by 0.0166 and the result by twenty will give the amount of potassium iodide in 100 mils of tincture of iodine.

Estimation of Organically Combined Iodine.

TYPE A.—IODOFORM.

Probably the one preparation of iodine in which it has been most difficult to estimate the iodine content is iodoform gauze. Previous to this we have been converting the iodine of the iodoform to potassium iodide with alcoholic potassium hydroxide, evaporating the alcohol, breaking up the resultant iodide with ferric chloride and hydrochloric acid, and distilling the liberated iodine into a solution of potassium iodide and titering with $\frac{N}{10}$ sodium thiosulphate solution. While this method is theoretically correct, practical demonstration reveals the presence of many possibilities of error which may affect the results. Portions of the ferric chloride and hydrochloric acid may be mechanically carried over into the potassium iodide, thereby liberating free iodine from this solution and causing high results. Another possible source of error is the escape of iodine from the potassium iodide—iodine solution in the receiver. Taken as a whole, we considered the method clumsy and unprofitable for our use, due to the valuable time consumed in setting up the apparatus and evaporation of the alcohol and general manipulation of the process. The following scheme of analysis offers little or no possibilities of error, consumes considerably less time, and is not nearly so complicated as the distillation method. A portion of the moist gauze (about 20 Gm.) is placed into the reservoir of an extraction apparatus, while 50 mils of alcoholic potassium hydroxide are added to the extraction flask. The contents of the flask are boiled, which drives the alcohol up into the condenser; the condensed alcohol falling back on the gauze dissolves the iodoform which is then carried into the flask where it is converted by the potassium hydroxide into potassium iodide by boiling.

When the iodoform has been exhausted from the gauze, which is recognized by the absence of color in the gauze, the operation is continued for ten minutes, which insures the complete conversion of the iodine in the iodoform into potassium iodide. The contents of the flask are now transferred into a separatory funnel and the method continued as in the determination of potassium iodide in tincture of iodine. One mil of $\frac{N}{10}$ sodium thiosulphate solution is equivalent to 0.0131 Gm. of iodoform. The gauze is removed from the cylinder, dried and accurately weighed, the weight added to the amount of iodoform found, and this total divided into the weight of the iodoform will give the percentage of iodoform in the gauze. The above calculations are based upon the weight of dry gauze which we have found most applicable for the determination of the active constituent of medicated gauze.

Estimation of Organically Combined Iodine.

type b.—iodine organically combined in oils.

Recently, there have appeared upon the market several oily preparations containing combined iodine. We were called upon to confirm the statement on the label, which claimed 10 percent iodine, and found that the following method was applicable for the estimation of iodine in this combination.

About 1 Gm. of the preparation is accurately weighed into a tared flask, 30 mils of half-normal alcoholic potassium hydroxide are added and the whole boiled under a reflux condenser until the oil is completely saponified, the contents of the flask transferred to a separatory funnel and about 30 mils of chloroform added and the whole shaken. After separation the chloroform is drawn off and discarded which removes the fats that interfere with the final titration. Should an obstinate emulsion occur here it may be broken up by the addition of acetic acid. Phosphoric acid and hydrogen peroxide are now added and the iodine is shaken out with chloroform as in the preceding methods.

Determination of Free Iodine and Potassium Iodide.

in iodine ointment.—u. s. p.

The determination of free iodine is essentially the same as that proposed by Mr. Leo S. Fried, Journal A. Ph. A., 4, 621. A weighed portion of the sample is dissolved in chloroform, water added and the free iodine titered with $\frac{N}{10}$ sodium thiosulphate solution. To determine the potassium iodide, one gramme of the ointment is accurately weighed into a tared flask and the whole boiled with alcoholic KOH. After removal of the fats with chloroform, the procedure is the same as in the previous methods. From the total iodine subtract the free iodine, and calculate the remainder to potassium iodide.

A sample of iodine ointment was carefully prepared according to the U. S. P. directions. After standing two days it was assayed by the above method and found to contain 3.66 percent free iodine and 4.06 percent of potassium iodide. After standing two weeks the preparation assayed 2.71 percent free iodine, and 4.08 percent potassium iodide.

When we first attempted the assay of this preparation by this method we expected to find about 7.1 percent total iodine, this being the theoretical amount calculated from the potassium iodide plus the free iodine. While we had no

difficulty in obtaining check results, we invariably found that the results were lower than the theoretical amount. This was indeed puzzling to us, but after several determinations we found that the difference between the free iodine and the total iodine was constant, and this difference when calculated to potassium iodide was found to be about 4 percent which is the theoretical amount of potassium iodide incorporated into the preparation. We conclude then that boiling with alcoholic KOH does not free the iodine absorbed by the ointment base. No doubt if a suitable method for converting the absorbed iodine to some iodide which is easily broken down, the entire iodine content of the ointment may be determined by this method. To date, however, we have been unable to accomplish this.

A sample of tincture of iodine was prepared by us according to the U. S. P. formula, the ingredients being accurately weighed upon our analytical balances. When assayed according to the above method the following results were obtained:

No. 1	Iodine	6.92%	Potassium Iodide	4.97%
No. 2	Iodine	6.92%	Potassium Iodide	4.92%

A sample of potassium iodide, U. S. P., assayed 99.69 percent pure, when broken up and the liberated iodine determined as above and calculated to potassium iodide.

A sample of iodoform, U. S. P., when assayed yielded 100.1 percent pure.

A sample of an oily iodine preparation, labeled 10 percent, assayed 10.23 percent and 10.29 percent iodine.

We have also successfully applied this method for the determination of iodine in the following substances: Ferrous iodide, calcium iodide, and calcium iodized tablets, and conscientiously believe that the method is accurate, rapid and may be applied to practically all combinations of iodine.

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ANALYTICAL LABORATORIES OF THE
NORWICH PHARMACAL CO.

MANNA: A BRIEF STUDY OF SOME COMMERCIAL SAMPLES.*

BY CHARLES H. LAWALL AND LEROY FORMAN.

Manna has been variously described by the authors of works on materia medica. Its history goes back with definiteness to the Arabians of the 8th and 10th centuries. Before that time the name seems to have been applied to a number of substances not even remotely related to our present drug known by that title.

The name originated in Hebrew literature in connection with the manna of the Israelites and it is stated by etymologists that it originally meant "What is it?" That this meaning of the word has some application at the present time is apparent to anybody who makes a practical study of the subject and tries to harmonize the statements in the literature with the properties as shown by analytical investigation.

The favorite statement in literature seems to be that manna contains from 80 to 90 percent of mannite, mannite (mannitol) being understood to be the hexatomic alcohol, $C_6H_8(OH)_6$. Some authorities qualify the statement as is done in U. S. Department of Agriculture F. I. D. 162, in which, among the requirements adopted, is mentioned mannite (soluble in 90 percent alcohol), not less than 75 percent.

That there is a great difference between true mannite and the substance soluble in 90 percent alsohol is shown by the researches of Tanret (*Bull. Soc. Chim.*, 1902, 27, 947), who shows that manna contains notable quantities of other sugars. His analyses show the following composition:

Mannite	40–55	percent
Levulose	2.5–3.4	percent
Dextrose	2.2–3.0	percent
Manneotriose	6.0–16.0	percent
Manneotetrose	12.0–16.0	percent

together with small amounts of resin and ash and about 10 percent of moisture.

Although, as will be seen, Tanret's work was published 14 years ago, many authorities and works of reference published since then still continue the statement of the presence of large quantities of mannite and give the impression that simple extraction with strong alcohol and cooling of the solvent will result in the production of beautiful crystals of mannite.

Several samples of manna have been submitted for investigation, which were slightly substandard as regards solubility in 90 percent alcohol; an attempt was made to obtain samples of various ages and qualities in order to make a comparison of some of the chemical and physical properties with those of the suspected samples.

For purposes of comparison a sample of pure crystal mannite was also obtained. All of these samples were subjected to a number of tests and determina-

* Read before Scientific Section, A. Ph. A., Atlantic City meeting, 1916.

tions, as shown by the following table. The old samples came from collections in the Philadelphia College of Pharmacy and represented the highest type of the market product of their respective periods:

	Mannite: pure crystals.	Suspicious sample.	Sample of so-called high-grade manna purchased in open market.	Sample of large flake manna at least 25 yrs. old.	Sample of small flake manna at least 25 yrs. old.	Sample of large flake manna over 30 yrs. old.
* Polarization of whole manna before inversion	0°	73.5°	72.8°	73.8°	78.0°	45.8°
Polarization of same after inversion	0°	52.9°	39.5°	59.2°	51.5°	37.2°
Reducing sugars before inversion	None	17.10%	13.2%	17.7%	10.8%	11.3%
Reducing sugars after inversion	None	36.4%	32.6%	26.6%	26.8%	16.6%
Percent sol. in 90% alcohol	Entirely soluble	68.8%	90.5%	93.7%	77.9%	96.7%
Polarization of alc. sol. ext. before inversion	0°	65.3°	55.1°	44.5°	insuf. material	57.3°
Polarization of same after inversion	0°	51.5°	35.5°	32.3°	"	45.6°
Reducing sugars in alc. sol. ext. before inversion	None	15%	16.4%	11.6%	"	18.7%
Reducing sugars in same after inversion	None	30.3%	33.2%	23.1%	"	23.9%
Melting point	163° C.	131° C.	123° C.	140° C.	140° C.	140° C.
Charring with strong H_2SO_4	None	slight	slight	slight	slight	very slight
Fermentation test with yeast	Negative	positive	positive	positive	positive	positive

The investigation of the residue of the suspicious samples after extraction with 90 percent alcohol shows 7.83 percent reducing sugars before inversion and 21.0 percent after inversion.

A brief study of the above results will convince one that there is a necessity for further work upon authentic samples and that the statements of mannite content have been in all probability grossly inaccurate, due to lack of correct knowledge of the subject.

It is true that for the present we may as well retain the requirements of alcohol-soluble matter, ash and moisture that have been promulgated, but it is time to discard the term mannite in connection with this alcohol-soluble factor.

In this connection it is surprising to note that the requirements of the U. S. P. IX make no mention of any of these factors as requirements, although the Swiss Pharmacopoeia since 1907 has required a 90 percent alcohol-soluble factor of not less than 75 percent and a maximum of 10 percent of moisture and 3 percent of ash.

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* All of the polarization figures are sugar scale readings in a 200 mm. tube, using 26 Gm. in 100 Cc. of solution.

NEW ORGANO-METALLIC COMPOUNDS*

BY LOUIS F. WERNER, A.M.

Inorganic and organic compounds of mercury and arsenic have long been used in the treatment of disease, due to pathological conditions of the blood. Most of these diseases are caused by the existence of bacteria in the blood stream, chiefly of the family known as the Protozoa. To this type of maladies belong sleeping sickness, syphilis, and malaria; in animals, surra, dourine, tsetse fly disease, etc.

Of the several diseases mentioned above, there is no doubt but that syphilis has been the most dangerous, and far-reaching in its effect on mankind, and the one giving the chief incentive to the study of compounds useful in the treatment of diseases of this type.

It must be remembered, however, that the compounds to be spoken of in this paper, were not always tried out on animals and human subjects infected with syphilis, but in many cases other members of the Protozoa group were the parasites, notably those causing sleeping sickness. The pharmacology of these drugs is, therefore, not in an altogether satisfactory condition to make any great generalizations with accuracy as yet.

One of the earliest derivatives of arsenic or organic nature to be used was Atoxyl, para-aminophenyl arsenic acid (sodium salt):

$$NH_2{-}C_6H_4{-}AsO(ONa)_2$$

This compound was used with some success in the treatment of sleeping sickness and syphilis, but was found very toxic to the host, and often led to blindness, so that it is very little used at present.

Salvarsan, 606, or chemically *p,p'*-dihydroxy-*m,m'*-diamino-arseno benzene hydrochloride, a derivative of Atoxyl, has been the most successful in the treatment of syphilis, of the many organic derivatives of arsenic prepared to date:

$$HCl{-}NH_2{-}OH{-}C_6H_3{-}As = As{-}C_6H_3{-}OH{-}NH_2{-}HCl$$

As to the results obtained by the use of this compound, and the method of administration, all are familiar, as well as with its newer derivative, Neosalvarsan; the sodium formaldehyde sulphoxylate salt of Salvarsan, mixed with some sodium sulphite:

$$HO{-}NH_2C_6H_3{-}As = As{-}C_6H_3{-}OH{-}NH{-}CH_2SO_2Na$$

It is of interest to know of some of the compounds probably investigated by Ehrlich in his search which resulted in the discovery of Salvarsan:

Para-amino-phenyl arsenic acid
Para-hydroxy-phenyl arsenic acid
Ortho, meta, and *para* toluidine arsenic acids
Ortho, meta, and *para* cresol arsenic acids
Naphthyl arsenic acids

* Presented before the Cincinnati Branch of the American Pharmaceutical Association.

Naphthol arsenic acids
Naphthylamine arsenic acids
Amino phenyl arsenoxids
Hydroxy phenyl arsenoxids
Para-hydroxy-*meta*-aminophenyl arsenic acid
Meta-dihydroxy arsenic acids
Meta-para-dihydroxy arsenic acid
Meta-para-diamino arsenic acid
Meta-para-diamino arsenoxids
Meta-para-dihydroxy arsenoxides
p,p'-dihydroxy-arseno benzol
p,p'-diamino-arseno benzol
Di-acetyl *p,p'*-diamino phenol

Besides the above mentioned compounds, many of their gold mercury, platinum and other metallic salts have been made.

Furthermore, it should be remembered, that in the arrangement of the elements according to Mendelejeff, in what is known as the periodic system, the following elements occur in the same column as arsenic: Nitrogen, Phosphorus, Vanadium, Columbium, Antimony, Tantalum, and Bismuth. Compounds of these elements would, therefore, be expected to have many of the general chemical and physiological properties of those of arsenic. Compounds of these elements have been made of analogous structure to those of arsenic, also mixed compounds of them with arsenic:

C_6H_5–Sb = As–C_6H_3–NH_2–OH
C_6H_5–Bi = As–C_6H_3–NH_2–OH
C_6H_5–P = As–C_6H_3–NH_2–OH
C_6H_5–N = As–C_6H_3–NH_2–OH
Nitro-phenyl stibinic acid
Amino-phenyl stibinic acid
Hydroxy-phenyl stibinic acid
Hydroxy-phenyl stibinoxide
Amino-phenyl stibinoxide
Nitro-phenyl stibinoxide

Compounds of the sulphur group and arsenic have also been prepared:

S = As–C_6H_3–OH–NH_2
Se = As–C_6H_3–OH–NH_2
Te = As–C_6H_3–OH–NH_2

Many of these compounds have been found useful, but as they do not excel Salvarsan, and are often very difficult to make, there is very little probability of them ever being used to any great extent.

As might be expected, the commercial success of Salvarsan and Neosalvarsan has greatly stimulated the study of the organic mercury compounds. The organic compounds of mercury may be placed in two classes,

Type R–Hg–R Type R–Hg–X

where R is an organic radical, either aliphatic or aromatic, and X is a negative radical or atom as the halogens, nitric acid or sulphate radical, the acetyl radical, etc.

It has been found that, as a general rule, the compounds of the second type are five times as toxic as those of the first class, and it may be said that the toxicity of the compounds of mercury increases with the solubility in the body fluids, and

the ease with which ionic mercury can be split off, and is lowered by the ease in which it can be eliminated. The organic compounds of mercury have not come up to expectations, as they are slow of action, and have been found in most cases to be more poisonous to the host than to the bacteria they are meant to kill. The following are a few of the two classes of compounds prepared:

Type R–Hg–R	Type R–Hg–X
Mercury diphenyl C_6H_5–Hg–C_6H_5	Phenyl mercuric chloride C_6H_5–Hg–Cl
Mercury diphenol HO–C_6H_4–Hg–C_6H_4–OH	Phenol mercuric chloride HO–C_6H_4–Hg–Cl
Mercury dibenzoyl COOH–C_6H_4–Hg–C_6H_4COOH	Benzoyl mercuric chloride COOH–C_6H_4–Hg–Cl
Mercury dinaphthyl $C_{10}H_7$Hg–$C_{10}H_7$	Naphthyl mercuric chloride $C_{10}H_7$–Hg–Cl
Mercury dinaphthol OH–$C_{10}H_6$Hg–$C_{10}H_6$OH	Naphthol mercuric chloride OH–$C_{10}H_6$–Hg–Cl
Diamino-dibenzoyl mercury NH_2–COOH–C_6H_3–Hg–C_6H_3–COOH–NH_2	Aminobenzoyl mercuric chloride NH_2–COOH–C_6H_3–Hg–Cl
Dibenzyl mercury C_6H_5–CH_2–Hg–CH_2–C_6H_5	Benzyl mercuric chloride C_6H_5–CH_2–Hg–Cl
Diamino-dihydroxy-diphenyl mercury OH–NH_2–C_6H_3–Hg–C_6H_3–NH_2–OH	Amino-hydroxy-phenyl mercury OH–NH_2–C_6H_3–HgCl

It should be noted that this last compound of mercury is the analogue of Salvarsan.

Besides the typical compounds listed above, there are a myriad of others; derivatives of the aliphatic hydrocarbons, of the dyes, of the alkaloids, quinoline, the pyrazolones, etc. The ones, however, that apparently are the most effective are aromatic derivatives, but even these are too poisonous to be of value in the treatment of syphilis, so that there is very little probability of them ever becoming of equal importance, in this field, to the arsenic compounds.

LABORATORY
WERNER DRUG & CHEMICAL CO.,
CINCINNATI, O.

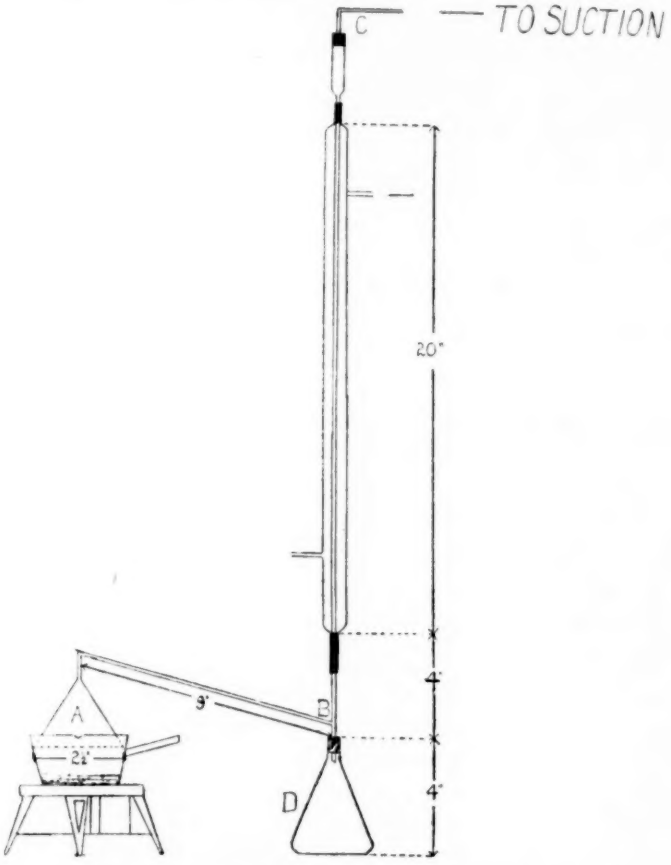
CHANGE OF COLOR IN GREEN EXTRACTS.

Green extracts from the leaves of plants very rapidly lose their color when exposed to light and air, the chlorophyll being converted into chlorophyllan. Yet in living plants exposure to light and air has no effect on the green tint. The author assumes that there is a special enzyme in the plant—an "anti-oxidase"—which protects chlorophyll from the action of light and oxygen, and also from the peroxidase of the tissues, which readily destroys it. In the living plant anti-oxidase accumulates in the plastids in sufficient quantity to counteract the peroxidase. In extracts the equilibrium between the enzymes is disturbed and the pigments are quickly destroyed. During the period of assimilation of the plastids in the living plant the chlorophyll is constantly used up and constantly replaced. The function of the anti-oxidase is to regulate this process, and thus prevent too rapid oxidation.—V. Lyubimenko, *Bull. Acad. Sci. Petrog.*; *Chem. Abstr.*, 1916, 10, 2467; through *Pharmaceutical Journal*.

A SIMPLE APPARATUS FOR THE RECOVERY, DURING EVAPORATION, OF ORGANIC SOLVENTS.*

BY HARRY F. LEWIS.

The author has recently had to make a great number of determinations with ten to twenty Cc. portions of organic solvents, and this simple piece of apparatus has been devised for the recovery of these small portions after their evaporation.



Ordinary methods of distillation are not satisfactory here, because it is extremely difficult to remove all the residue from a distilling flask, and in such determinations, it is the residue that is important. Moreover, it is not at all handy to take the time required for such an operation. The ordinary laboratory method, as a rule, is to evaporate the solvent on the steam bath, in an evaporating dish with the subsequent loss of the solvent. This is an expensive procedure, where the amount of solvent lost would average a liter or two a week.

* Contribution from the Pharmaceutical Research Fund, at the University of Illinois.

The apparatus is easily made. A $2^1/_2$″ funnel (*A*) with a long stem, is bent as shown in the illustration, and the end of the stem connected with a water condenser at *B*, about an inch from the end of the inner tube of the condenser. The length of the stem, from the bend to the condenser, should be about nine inches. The top of the condenser is fitted to a water suction by tubing (*C*), so that a gentle draft may be had. At the lower end of the condenser, a flask (*D*) is fitted tightly, by means of a cork.

The evaporating dish, beaker, or crucible with its contents, is set on a hot plate, under the inverted funnel, the height of which should be regulated so that it is about a half inch above the surface of the liquid, where the dish has a greater diameter than the funnel. In the opposite case, the dish is simply set underneath the funnel. Enough suction is then applied at the condenser to draw the vaporized solvent through the funnel into the condenser, where it condenses and collects in the flask. By this method small amounts of chloroform, ether, petroleum ether, alcohol, carbon bisulphide, etc., which would ordinarily be discarded, may be recovered for further use.

SOME OF HENRY FORD'S RULES FOR SUCCESS.

Everything begins with thought.

If a man knows where he is going nothing will stop him.

Every man gets what he deserves; if his thinking is wrong he will lose out.

Most people make the initial mistake in business of thinking about the dollar.

If a man is trying in his business to serve the good of others, the money will come, it is bound to come, he cannot fail.

One of the first things every man must realize if he is going to succeed is how little he can accomplish alone; the second is that everyone has some good in him and can do something well.

I believe in big business: the bigger the organization the bigger the opportunity for more men to contribute the special good in themselves.

Every man can do some one thing well, but no man can do a lot of things well at the same time.

In business there is no escaping the law of compensation; if you do a man a mean trick, you pay; if you do yourself a mean trick, you pay.

If a man worries it is because he has done something that's not on the square or else because he hasn't thought deeply enough to clearly understand his problem.

Most people eat too much, and in consequence they sleep too much and don't think enough.

My advice to every business man is: work and read and think and then work some more and then some, but don't ever stop thinking.

Don't ever be afraid of criticism: criticism is the greatest educator in the world if we will only let it be.

JOINT SESSION OF THE SECTION ON LEGISLATION AND EDUCATION, WITH THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES, AND THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY

The joint session of the Section on Legislation and Education, with the American Conference of Pharmaceutical Faculties, and the National Association of Boards of Pharmacy was called to order by Chairman F. H. Freericks, of the Section on Legislation and Education at 8.00 P.M., September 6th.

CHAIRMAN FREERICKS: Mr. Burton is not with us, but we have with us the president of the American Conference of Pharmaceutical Faculties, Prof. H. V. Arny, and I will ask him to preside during this meeting.

(Professor Arny takes the Chair.)

CHAIRMAN H. V. ARNY: The first order of business will be the reports of the Philadelphia meetings last week. Professor Teeters is here; we will ask him to read the reports of the American Conference of Pharmaceutical Faculties.[1]

Report read by Professor Teeters.

Moved by Charles Gietner and seconded by Philip Asher that the report be received and take the usual course.

Motion carried.

THE CHAIRMAN: The next order of business will be a similar report of the 13th annual meeting of the Boards of Pharmacy,[2] by Secretary H. C. Christensen, of Chicago.

Report read by Mr. Christensen.

E. G. Cox moved that the report be received and take the usual course. Seconded by Geo. C. Diekman.

Motion carried.

THE CHAIRMAN: The next two items on the program are, first, the Summary of Important Discussions and Conclusions at the respective meetings of the A. C. of P. F. and N. A. B. P., to be presented by representatives of the respective bodies, and, second, Presentation of Resolutions adopted by the A. C. of P. F. and N. A. B. P. to be acted upon at this session.

It was the intention of Chairman Freericks that the personal touch in these reports should be given by President Burton and the present Chairman. President Burton not being here, I would say that Mr. Haussamen of North Dakota has kindly consented to speak for the National Association of Boards of Pharmacy, with the full understanding that it will be an entirely informal statement.

Now, that being the case, the Chair will speak very briefly on this admirable report of Chairman Teeters and from an entirely informal and personal standpoint. I also want to say that I believe we all would appreciate the value of having this discussion entirely informal, and I hope that the members present at the meetings of this organization will be good enough to enter into the discussions. There was

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[1] A report of the meeting was published in the September number of the JOURNAL, pp. 929–943.

[2] A report of the meeting was published in the September number of the JOURNAL, pp. 944–948.

a large amount of work done, and we should follow these reports, because the American Pharmaceutical Association is deeply interested.

Taking up the subject of the meeting of the Conference, there were three very important accomplishments.

The first one, which I think was of very great importance, was the action of the Conference in regard to the requirement passed at the Detroit meeting, that a two-year high school course should be required as an entrance requirement, beginning January, 1917. This, as the Secretary read, was finally arranged, after very considerable discussion on the subject, to make its adoption mandatory in 1917. I want to speak of this and explain this situation.

It was not a case where the Council has really backed down from its original stand, but was due to changed conditions during the past year. I believe the most important factor that caused this change, from a compulsory to a mandatory resolution, was due to the fact that in the interim, since the last meeting, the New York Pharmacy Law has been so amended that this requirement will begin in 1918. I want to add that the value of the Conference was never more clearly shown than in the way the situation was handled. It was a conference in the truest sense of the word, where men of different opinions assembled and discussed the matter, and when it came to a final result they met in the attitude of forbearance, which is the true ideal of a conference.

There were a large number who favored immediate action. In other words, some of the schools were demanding two years high school work, and there were others who were entirely ready and prepared to begin this in 1917, but there were quite a number, notably those who are directly dependent upon the New York situation, who did not feel that we were quite ripe for the situation, and the result was that for this year, instead of the provision being mandatory, it is recommendatory.

There is another point in connection with this and that is to make this requirement absolutely mandatory, we will have to change our by-laws, and I have no doubt that by next year the time will be ripe for the change.

This is not merely a statement of facts, but I give it to emphasize the value of a conference where men of different minds finally adjusted differences.

The next thing was the handling of the 1920 Resolution. At the San Francisco meeting, or to go further back, at the Detroit meeting, it was recommended that in 1920, a four-year high school course should be made an entrance requirement for admission to the Conference.

At the San Francisco meeting the National Association of Boards of Pharmacy, as we all know, put themselves on record for prerequisite legislation based on four-year entrance requirements and a two-year college course, and that this was to become effective in 1920. This was, of course, a declaration of principles, but no special plans were provided at that meeting whereby this high ideal could be crystallized. The result was that a recommendation was made that this be put in more tangible shape. It was agreed that the Joint Committee referred to in Secretary Teeters' report should try to work up sentiment in each state by submitting a referendum vote, and when a state declared its readiness for prerequisite

requirements, every possible assistance should be given by the Association and the Conference. The idea is eminently practicable, because the legislative committees in each state will realize that behind them are the Association of Boards and the Conference.

The third important point was the report which was given in our Conference and then also in the Association of Boards and then at the joint session held last Saturday, and that was the report of the Joint Committee on Examination Questions. As already stated by the Secretary, there are a number of exceedingly important committees in the Conference, each did very valuable work, and, therefore, it is not a question of invidious distinction when I single out this Committee. I do not mean to say that the others did not do as good work, but this Committee was rather fortunate in the fact that they had the most important work that the Conference and Boards could do, and that is, establishing uniformity in examinations. If they are put on a basis of uniformity, the strongest argument against interchange of certificates will be done away with.

This Committee has collected five thousand questions, which are being classified, and I think that there is no work that these two organizations are doing that is of greater service.

The last point will be very brief. That is the very valuable report of the Committee on Prerequisite Requirements. In appointing this Committee, Professor Day was made chairman for the simple reason that three years ago he presented the most valuable summary of prerequisite requirements it has ever been my pleasure to read. Professor Day was equal to the occasion, and his recommendations, which were read by the Secretary are of tremendous value, and will be of still greater value to the state legislative committees.

These were found so significant that the Conference requested that they be published in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION,[3] and not merely the recommendations, but also the arguments against prerequisite legislation, such as are always advanced whenever we desire to amend pharmacy laws.

If we can pass good prerequisite laws and establish uniformity in examinations, all the other things we desire will come to pass.

While I am on my feet, I will say that there is an exceedingly important report which was specifically referred to this Association at the joint session of the Boards and Conference of Faculties, and that was the report of the Committee on Scholarships. Dr. Alpers, I think, will be here this evening, and when I see him I will ask him to present this report.

H. F. FREERICKS: I do not think we should allow this opportunity to pass for expressing to Professor Arny our appreciation of the nice manner in which he has related to us the important things that transpired at the Conference of Faculties last week, and I am certain that I voice the sentiments of all here.

THE CHAIRMAN: Is there any discussion on the subject of the work of the Conference?

ABSTRACT OF DISCUSSION.

WILBER J. TEETERS: There is one report by the chairman of the Executive Committee of the Conference which, it seems to me, would be of interst to us all. The report was given

[3] This report was printed in the September number of the JOURNAL, pp. 939–943.

statistically, showing the advancement in preliminary educational matters. These statistics show that at the present time, in the colleges belonging to the Conference, fifty-six percent of the students had four years' high school at the present time.

W. C. ANDERSON: I think that assertion of Prof. Teeters ought to be qualified to the extent that this percentage was based on the colleges heard from. It was not a record of all the colleges, only those who had replied to the request. When you base this number of high school graduates, entering a college of pharmacy, upon the number of men and women who are licensed to practice pharmacy in the United States each year, the proportion of high school people going into the drug business is much smaller. I understand that about twenty-five hundred took examinations during the year, and when you compare four or five hundred high school men with twenty-five hundred, the proportion of high school boys and girls who are taking up the study of pharmacy is quite different.

H. H. RUSBY: That is one thing that impressed me. I was greatly surprised at these figures and I can hardly accept them even yet. I believe that I could find three schools in the Conference which, together, have more students with only one year high school work than the total number covered in that report. I believe that to be true, but I have not looked it up.

Another thing struck me as important. That is, how many persons enter pharmacy during the year and are licensed that have not had even one year. There is nothing said about those who have had no work whatever. All those questions came up in my mind and they were not answered in that report, and I would like to get some information in regard to it. I think the most encouraging thing I heard was, that the Boards of Pharmacy are so strongly inclined to high school graduation. That is most hopeful. Alone, the Conference cannot do much, but if the Boards of Pharmacy are in favor of it they can do a great deal toward bringing it about, and I am more hopeful about seeing four-year requirements at a relatively early date than I have ever been before. That, in my opinion, was the most important result of both meetings.

JULIUS A. KOCH: If I recollect rightly, out of twelve hundred and twenty some odd students matriculating last year, fifty-six percent were high school graduates, and about seventeen percent had one year of high school. The other figures do not run so clearly in my mind, but there was a steady progression. I think that four years ago—the first statistics were four years back—the percentage of high school graduates was in the neighborhood of thirty-five percent, and there has been a steady progression up to fifty-six percent. The men admitted with one year of high school work started, I think, with thirty-four percent four years ago and dropped down to seventeen percent last year.

H. V. ARNY: The question raised was, out of the twelve hundred and twenty, did that represent most of the schools in the Conference?

J. A. KOCH: That represents all of the schools in the Conference from which we had statistics regarding the high school work the students had. I explained when making my report that, for instance, the State of Pennsylvania now requires that pharmacy students present a certificate from the Bureau of Professional Education: we admit our students on this certificate and most of the schools do not report on how much high school work the students had—simply report John Smith on Certificate No. 394 of the Bureau of Professional Education. I presume these twelve hundred and twenty-nine represent approximately half of the students of pharmacy entering schools, which hold membership in the Conference.

H. V. ARNY: Do you think, Professor Koch, that the other half, if heard from, would show a similar ratio?

J. A. KOCH: I think so. Very nearly so.

H. V. ARNY: I would like to ask—among the number given for Pennsylvania, you had no percentage—you just got those whom you knew specifically—there were a good many other students, but you simply have a number?

J. A. KOCH: The only school in Pennsylvania from which statistics were available was the Pittsburgh College of Pharmacy, and I had statistics from these; of the other schools I know only the certificate numbers. The same applies to New York State. Many schools in New York simply note the registration number, the Regent Certificate, on which the student was admitted.

W. C. ANDERSON: Was it not stated in a paper given before the Conference that the schools of pharmacy requiring four years of high school for entrance admitted only one hundred and seventy-six students?

H. H. RUSBY: That does not have any relation whatever to the number of students who had four years of high school, but the schools that demanded four years for admission, only had one hundred and seventy-six.

J. A. KOCH: Therefore, there must have been over a thousand admitted into schools which do not have a four-year requirement.

CHARLES GIETNER: I believe there were four or five states that adopted a prerequisite of four years high school, and Pennsylvania was mentioned as one. According to your statement, Pennsylvania does not have such requirement.

J. A. KOCH: Pennsylvania has no law demanding preliminary requirement. It was simply by common consent that we adopted, first, one year and now, two years.

H. V. ARNY: Has Pennsylvania adopted two years?

J. A. KOCH: The schools in Pennsylvania have.

R. A. LYMAN: To me the most hopeful thing is this, that so many young men and women are themselves seeing the advantages of a high school course before they study pharmacy. That is a most hopeful thing, because that induces public opinion, and they are doing so in spite of the fact that boards are not requiring that for examination at the present time, although they may have recommended it last year. But that recommendation could not possibly have affected the students in the schools last year.

It is certainly hopeful, as Dr. Rusby says, to see this progressive tendency among the examining boards of the United States and to see so many schools take a stand for higher education. I trust that before a great many years we will see a lot more of the schools take that progressive attitude.

GEO. D. TIMMONS: I appreciate the roseate view of the last speaker, but is it not really a fact that progression along the line of education is really the whole thing after all; that there is a larger percentage of young people to-day that take advantage of the opportunities they have and become high school graduates. If you will follow statistics you will find that, not only in pharmacy, but in all other lines a greater percentage have had four years of high school. We have high schools everywhere, and the whole tendency is on an upgrade normally and not because we are asking for it.

GEO. C. DIEKMAN: There is still another phase that seems to me to be of interest, and that is, we can ascertain what percentage of young men and women who pass boards of pharmacy each year were four-year high school people. I do not underestimate at all the value of education. I believe in education and agree with the speakers who uphold four-year requirements, but I fear that a great many of the young men and women who have four years of high school experience are lost to retail pharmacy. They do not stay in retail pharmacy; they do something else. Of course, the education is just as valuable, but I am afraid they do not stay in retail pharmacy—they take up something else, and I would be very much interested if Professor Koch could take up that tabulation.

J. A. KOCH: I think that could be best tabulated by the Association of Boards of Pharmacy. These papers have been so interesting and such a surprise to me that I expect to go into this much more deeply and expect to obtain from the schools statistics which will be more complete, for next year.

CHARLES GIETNER: There appears to be a sentiment that anyone who does not talk two, three or four years' high school is objecting to higher education. That is not so. I came here, not to oppose higher education. I came here to give it a lift, but I came from a State where the time is not ripe for such requirement.

Now, the remarks of Professor Diekman struck me as a valuable thought. Why not let the different State Boards keep such records in tabulated form? I think there are very few in Missouri that come with two, three or four years of high school, a majority have had only one year. I heard only yesterday from Professor Jordan that in Indiana high school education does not enter into the requirements of their Board.

CHARLES GIETNER: I would move that it is the sense of this meeting to have the secretaries of the different State Boards of Pharmacy to tabulate the high school graduates coming up for examination from now until the next meeting.

Motion seconded by Geo. C. Diekman.

C. B. JORDAN: I have attended these meetings year after year, and every one is saying "We are going forward." Our National Association of Boards of Pharmacy have made recommendations as to what State Boards would do, and I went home and braced myself for something to happen, and nothing has happened. I visited Mr. Christensen in Chicago and asked for this same data, and I could not get it. I sincerely hope that it will become available now, if the meeting will ask the Secretary to prepare it.

As Mr. Christensen says, let us go ahead as far as the National Association of Boards of Pharmacy is concerned and say two, three or four years, but let us also get after our State Boards, if it is possible.

E. G. COX: As a member of the State Board of Missouri, I advocate higher education in Missouri, but I think the recommendations of the Board should not become effective until after two or three years, and when the colleges are on such a basis; I endorse Mr. Gietner's motion.

C. S. KOON: It was suggested in Michigan that a compilation, such as has been suggested here, would be very valuable. As the Secretary of the Michigan Board, I would be glad to make this compilation and send it to Secretary Christensen.

The motion was carried.

PHILIP ASHER: Prof. Diekman made the statement that a good many who graduated from colleges of pharmacy do not continue in pharmacy. A great many of these four-year high school graduates who study pharmacy intend afterward to take up medicine, and I think it would be a good thing for the colleges to report each year on their graduates to see how many have continued their work as retail pharmacists.

Therefore, if I am in order, I would move that the Secretary of the Conference be requested to write to the various colleges for such information from year to year.

Seconded by Geo. C. Diekman.

L. E. SAYRE: It seems, we have here two problems: We have, what I might designate as a minimum requirement, which is represented by the boards, and the maximum requirement which the colleges are trying to reach.

The instructor looks upon education itself, and asks the question, what shall he do with regard to people who come to him and how should he prepare them? I do not see how these statistics can help him at all.

Our Chairman remarked in his address the other day that a majority of the students were simply perusers of the Pharmacopoeia and not users of it. I believe that in order to teach a young man to use the Pharmacopoeia—not peruse it—the best foundation is a four years' course in an accredited high school.

THE CHAIRMAN: The motion is that Secretary Christensen be requested to write to the deans of colleges of pharmacy, asking them to start statistics, beginning with 1917, as to graduates in reference to the question, how many four-year high school students remained in the retail pharmacy business, and how many t ok up other lines of work?

C. B. JORDAN: I would be perfectly willing to do this, if there is any advantage to come out of it. But, after we get the information, what are we going to do with it? Of what value is it, how long are we going to keep these men under

observation? They may go into retail pharmacy and remain three years and then enter some other business or profession.

GEO. D. TIMMONS: Another question is, what percent can we keep track of?

R. A. LYMAN: I maintain that a man cannot be a good dean unless he does that very thing. I think that is one of the duties of an institution—to keep track of its alumni, who they are and what they eventually amount to.

PHILIP ASHER: Last year I received a request from the State of New York, asking this very question, and I took the pains to give them a history, as to the personal status of all our graduates. What reason these gentlemen had for wanting to know what our students were doing, I have no idea. The thought was suggested by the remark of Dr. Diekman. It may not serve any good immediately, as far as the Conference is concerned, but you want to know something of the progress of pharmacy, and it is simply a matter of interest to us to see what our men are doing. If it is too much trouble for the deans, of course, we could not expect them to prepare such records.

L. F. KEBLER: I was discussing with one of the deans of a medical school the question of increasing the entrance requirements of the medical schools, and I asked him, "Are you getting any better results by the higher requirements?" and he said, "I don't know, it is a question."

I think it would be valuable information to know how the work of high school men compared with that of the men who have one year, two years, or no years of such education.

H. P. HYNSON: It seems to me that if we are to learn anything at all from experience in the past, some such statistics as these will be of great value to us.

I remember some years ago, just after I graduated, Dr. Simon read a paper in which he stated that all the better graduates had left pharmacy and taken up some other course. It touched my pride, and I at once went to work and ascertained what had become of the honor men in our college and I was glad to find that eighty-five percent of them had stuck to pharmacy and were making a success.

If we find out that the four-year high school students had stuck to pharmacy and made a greater success than the others, we would then be encouraged to require high school admission. But, if we find that a large percentage leaves pharmacy, and that the man who has had a practical course in a drug store sticks to pharmacy, I think we had better go back to the four-year apprenticeship. I think this will give us the very information we want and I hope that this motion will prevail, and that the deans will be somewhat stimulated to get in touch with their students and find out what does become of them.

Motion carried.

H. H. RUSBY: The gentleman on my right spoke for the Missouri Board of Pharmacy, and I understood him to say that they refrained from increasing their requirements until the schools had reached a more uniform basis as to their entrance requirements. I would like to ask the gentleman what inducement these schools will have to bring about uniformity when one demands two years of high school work and the Board gives an equal opportunity to a man who had never attended any school of pharmacy whatever. We have heard that a school in Missouri that wants to increase its requirements cannot do so, because the moment

they do the students leave them and go to other schools, and the Board gives them just as good a chance as they do the others.

E. G. Cox: I answer by saying, that our requirements are one year, or its equivalent.

Charles Gietner: If any Board lives up to the national requirements, it is the Missouri Board; we live up to the dictates of the Advisory Committee. The Missouri Board is not pulling back, but is shoving forward.

The Chairman: We will now hear from Mr. Haussamen.

H. L. Haussamen: The different recommendations have been acted upon. There is only one recommendation in this report that we would like to have discussed. The recommendation is "Be it hereby resolved, that we request that the Section on Education and Legislation of the American Pharmaceutical Association in joint session with the Faculty and Boards to give consideration to the Prerequisite Provisions....."

The reason for this recommendation is that we have a prerequisite in North Dakota which requires that all candidates for examination must be graduates from a college of pharmacy. This law was passed, and there is a clause in it which intended to provide for reciprocity with other state boards, but this section of the law is not very clear. We secured an opinion from the Attorney-General who said that this certainly was the intent of the law, and we are acting now, really under the opinion of the Attorney-General. We are acting from one session of the Legislature to another until such time when we can change this particular section. I want to bring to your particular attention that the pharmacy boards and colleges of pharmacy should make this section very clear, so that there will be no danger, on account of this particular law, of our being excluded from active membership in the National Association of Boards of Pharmacy.

This is the only recommendation we have up for discussion here. We draw your attention to it so as to make it clear that while we are active members of the Association now, in case another view was taken by a succeeding Attorney-General, we might not be able to retain our membership.

The Chairman: The recommendation, as I understand it, might be summarized in a word or two, that it is the sense of the Boards that in framing prerequisite legislation care must be taken not to make it restrictive as far as reciprocity is concerned, and to see that this particular section will not be ambiguous.

H. L. Haussamen: We want to be active members of the Association. As I understand it, there are only five States in which a college of pharmacy diploma is a prerequisite. In all the others, if the candidates can pass the examination of the Boards, whether they are graduates of a college pharmacy or not, they are accepted.

This makes it difficult for us to get clerks. They say to us, "We would like to go to North Dakota, but we are not graduates of a college of pharmacy." Take also the case of a man who desires to buy a store in North Dakota; his answer is, "I would like to go into business in North Dakota, but I am not a graduate of a college of pharmacy and I could not be registered."

We want to make this clear, that under the ruling of our Attorney-General, even though pharmacists are not graduates of a college of pharmacy, candidates

can be registered in North Dakota now, provided they have been registered prior to 1915.

Recommendation seconded by Geo. C. Diekman.

H. C. CHRISTENSEN: The reason for bringing this matter before this Association really was to refer it to the Voluntary Committee on Model Pharmacy Law. I would like to amend the motion so as to refer it to that Committee, and let them draft and submit a provision that will cover the point under discussion, so that when we have inquiries from different states in regard to prerequisite provisions we can recommend a clause that will be the same in every state.

Forty State Legislatures will meet this coming winter. I know personally of fifteen or sixteen states in which this prerequisite proposition will be brought up and, undoubtedly, legislative committees will be glad to have such a proposal in proper shape, that it would be worded right.

E. L. NEWCOMB: I would like to inquire what the states, that require a man to be a college graduate, do at the present time with regard to reciprocity.

GEO. C. DIEKMAN: I can speak only for New York. I think we differ from other states. We have no reciprocity at all. Everybody must take an examination in New York. We have a clause in the law which in effect says that the State Board may endorse the license of an applicant from another state upon the payment of twenty-five dollars, provided the applicant and the state from which he comes meet all the requirements of the New York State Board. We have so far not had any applicants. The applicant would have to be a college graduate.

H. C. CHRISTENSEN: The only state that you have as an active member of this Association, that has a prerequisite of that kind is North Dakota, and that is why attention was called to the importance of a provision being passed in the different states that will not interfere with reciprocity.

Conditions in New York are a little different from other states. New Jersey, for instance, has just become an Associate Member; they wanted to associate themselves as an Active Member, but on account of the wording of their prerequisite clause, it was impossible for them to do so. That goes to show the importance of getting the right kind of a prerequisite clause.

E. E. FAULKNER: Would a graduate of the University of Michigan, who is registered by the Michigan Board, be granted reciprocity in New York State?

GEO. C. DIEKMAN: I am not prepared to answer that question offhand. The gentleman would have to make application and be passed upon by the State Board. We are waiting for some such applications to be made, but nobody has done so. You send us a man who meets our requirements and have him make application and appear before the Board. That will test the question absolutely.

Motion carried.

THE CHAIRMAN: I wish to announce that the General Committee of the Conference and the Boards did make a very important recommendation, and that was the recommendation on the Fairchild Scholarship. We have just learned that Dr. Alpers, who has charge of the matter, is not well this evening and has retired, and it will have to be brought up at the general session of the Association.

(The Chair briefly outlined the conditions under which the Fairchild Scholarship existed and its award.)

The following papers were then read, discussed and referred to the Publication Committee:

"Privately Owned Schools and Colleges of Pharmacy," by Edward Spease.

"How to Study," by Frederick J. Wulling.

"Coöperation between State Medical and Pharmacy Boards, Drug Commissioners Acting under Their Joint Authority and Supervision," by E. H. Thiesing.

"Practical Drug Experience before Entering College," by Otto Raubenheimer.

THE CHAIRMAN: At the joint session held last Saturday, a very important paper by Professor Jordan was referred to this Section. We will now hear that paper. The title is, "Uniform Legislation."

After discussion of the paper, it was moved by Wilber J. Teeters, that the paper be received, the recommendations adopted, and then referred to the Publication Committee. The motion was seconded, the question called for, and the vote was favorable for adoption and so declared.

The fourth, fifth, sixth, and seventh tentative new provisions,* as presented by the Voluntary Conference, to be part of a Modern Pharmacy Law, were then called for and read by Chairman F. H. Freericks. They follow:

TENTATIVE PROVISIONS FOR MODERN PHARMACY LAW.

SHALL MEMBERS OF THE STATE BOARDS OF PHARMACY BE GRADUATES IN PHARMACY?

Provision No. 4. "The State Board of Pharmacy shall consist of five (5) members, to be nominated by the State Pharmaceutical Association, and to be appointed by the Governor, etc., at least three (3) of whom shall be graduates of a reputable college of pharmacy, and all of whom shall be actively engaged in retail pharmacy, having had at least ten (10) years of practical experience therein, the requirement for college graduation not to be applicable to those who at present are members of the existing State Boards of Pharmacy."

DISCUSSION.

The really important feature of Provision No. 4 would require that at least a majority of the members of all state boards of pharmacy be graduates of a reputable college of pharmacy, excepting in so far as it concerns those who are now members of existing state boards. There is considerable opposition to such a requirement on the ground that it would preclude many of the older and practically experienced pharmacists from being honored by appointment on state boards. It is argued that the practical experience of the older men fully offsets the advantage of college training, and that no distinction ought to be made on that account. On the other hand it is argued that the Provision is to be more applicable for the future, and that the time has come when at least a majority, if not all, of the board members should be college graduates. It is also argued with force that where the Prerequisite clause prevails it seems absurd that college graduates shall be examined by those who lack college training. It seems that there may be other arguments to present for or against the requirement.

SHALL PHARMACY TEACHERS MEET REQUIREMENTS PRESCRIBED BY LAW?

Provision No. 5. "Colleges, Departments and Schools of Pharmacy, to be recognized as such by the State Board of Pharmacy, shall require for graduation a course of study of at least two (2) years, such two-year course to be divided by an interim of at least two months, and to provide for at least twelve hundred (1,200) hours of study. They shall have a Chair in Pharmacy, Chemistry and Materia Medica, each in charge of a Professor, having besides the necessary special learning and training, either an academic or scientific degree, or both, from some reputable institution of learning: Provided, that nothing contained in this Section shall apply to those who when this Act becomes effective are, or have been, teaching in Colleges, Departments or Schools of Pharmacy."

* The first three tentative provisions will be found in last month's issue of the JOURNAL. All of these provisions will be of value to legislative committees in drafting amendments to pharmacy laws.

DISCUSSION.

The really important feature in Provision No. 5, is that it prescribes by law some qualification for those who would teach in our colleges of pharmacy. In a paper presented at the San Francisco Meeting by Dr. Wm. C. Alpers, strong reasons were advanced for holding that there should in some manner be an enforcible requirement to govern those who would teach in our colleges, so that there may be some assurance at least, that those who would teach are so qualified. He urged that all teachers, or at least those who would claim to be professors, be required to have an academic degree acquired by study and work and not by favor. Elsewhere it has been urged that with the more general requirement for the College Prerequisite, schools of pharmacy may be created or may be turned into institutions which seek only to serve the letter of the law and not its spirit in that respect. Admittedly, if schools of pharmacy may exist or may be created to serve only the letter of the law in meeting the college prerequisite, then the very aim of the prerequisite may be undone, if there be not also well defined requirements to govern the teaching staff of our colleges. It is objected, that any legal requirement of the nature referred to is unnecessary on the ground that all teaching institutions will fail which do not have a fit teaching staff; that those entrusted with the conduct of our colleges and schools of pharmacy may be relied upon to secure fit and qualified teachers in order to establish or maintain their reputation. It may be admitted that heretofore colleges and schools of pharmacy have been established because of an altruistic aim, but the vital question seems to be whether we may expect such altruistic aim to continue and generally prevail.

RECIPROCAL REGISTRATION.

Provision No. 6. "The State Board of Pharmacy may in its discretion grant Certificates of Registration to persons who furnish proof that they have been registered by examination in some other state, and that they are of good moral character. Provided, that such other state in its examination requires the same general degree of fitness as is required by examination in this state, and that the applicant qualifies in all other respects as is required for registration by examination within this state, and provided also, that such other state or states, in like manner, grant Reciprocal Registration to pharmacists and assistant pharmacists of this state. Applicants to the State Board of Pharmacy for Reciprocal Registration shall defray all necessary expense for making an examination into their character and general reputation, as well as pharmaceutical standing in the state where they formerly resided, such expense of investigation not to exceed the sum of ten (10) dollars, and for the purpose of such investigation and report thereon, the State Board of Pharmacy may secure the service of individuals or associations who are engaged in the work of compiling such information at an expense not to exceed ten (10) dollars in each separate case. In addition, an application for Reciprocal Registration shall be accompanied by an original registration fee of $10.00 which shall be refunded in case registration is not granted."

DISCUSSION.

It has been claimed with much show of sound reason that Reciprocal Registration should be provided for, if the applicant to the state board, having the higher requirements, can prove that he, in his particular case, meets such higher requirements, even though they do not prevail generally in the state where he has first become registered. This has to do principally with such states where the College Prerequisite is now a part of the law as distinguished from states in which the College Prerequisite is not now part of the law. The contention is made that in states where the College Prerequisite does not prevail there are very many graduates of recognized colleges. It is contended further, that in many of such states the examination requirements are fully equal to those in which the College Prerequisite exists, and consequently the examination requirement being equal, and the College Prerequisite having been met by the particular applicant, that he should have the right to Reciprocal Registration. The other features of Provision No. 6, have to do with uniformity and matters of detail regarding which there may not be much difference of opinion. It also seeks to place the activities of the National Association of Boards of Pharmacy on a sound legal basis in so far as they concern Reciprocal Registration and its support. In connection with Reciprocal Registration the thought is also advanced, that careful provision be made to safeguard the right to Reciprocal Registration, so that a late adoption of the College Prerequisite may not be retroactive in its effect upon pharmacists of other states who theretofore

in their own states met all of the requirements for registration, and who desiring Reciprocal Registration might otherwise be denied, because of the late enactment of the College Prerequisite in the state where they are seeking Reciprocal Registration.

Broadly speaking, the sixth Provision raises the question, whether each individual case should be considered to determine the right to Reciprocal Registration, or whether only the requirements of the respective state boards should govern. The question is also raised, whether the adoption of the College Prerequisite in connection with Reciprocal Registration should have an effect, which in its nature is retroactive.

AN ASSOCIATION OF PHARMACY STATE BOARD MEMBERS AND A BUREAU MAINTAINED GENERALLY BY STATE BOARDS OF PHARMACY.

Provision No. 7. "In order that the State Board of Pharmacy may be informed, and properly determine the status of the Boards of Pharmacy of other States desiring Reciprocal Registration, and that it may be generally advised regarding progress in pharmacy throughout the country, the said Board shall annually select one of its members, who shall meet with like representatives of such other State Boards of Pharmacy, as may be arranged, for the purpose of discussing and determining the degree of fitness required by such Boards, and the general advancement made in pharmacy. The expense of such representative shall be paid and allowed as are all other lawful expenditures of the members of the Board of Pharmacy. At meetings arranged for between the representatives of this State Board of Pharmacy with the representatives of other State Boards of Pharmacy desiring Reciprocal Registration there may be adopted uniform regulations and requirements which are deemed desirable by each of said representatives for their respective States to govern Reciprocal Registration, but such rules and regulations shall not be construed as based upon agreement by an official of this State with officials of other States, and they shall be binding only, if adopted by the State Board of Pharmacy as its own rules and regulations, and then only to govern within this State as the result of independent decision on the part of the State Board of Pharmacy, without any agreement by or with other State Boards of Pharmacy. The representative of the State Board of Pharmacy as such shall not enter into or join in the formation of any association depending upon agreement between the officials of this State with the officials of other States, but this shall not be construed to prevent such representative in his individual capacity from joining or being a member of an association which may be constituted of the representatives of State Boards of Pharmacy, also acting in their individual capacity. Any association so existing which is engaged in the compilation and study of the work of State Boards of Pharmacy, and which has for its object the general advancement of pharmacy and the keeping of records pertaining to the Reciprocal Registration of pharmacists, may at the discretion of the State Board of Pharmacy be given such information as it possesses pertaining to such aims and objects. The State Board of Pharmacy at an expense not to exceed one hundred ($100) dollars annually may subscribe for and secure the services of an association, engaged in the compilation of pharmaceutical information and progress, especially adapted for securing the greatest efficiency in the work of said Board."

DISCUSSION.

One of the serious difficulties which has confronted an organization of the state boards of pharmacy is found in the constitutional restrictions which must govern them. Article 1, Section 10, Paragraph 3, of the Constitution of the United States provides that: "No State shall, without the consent of Congress,.....enter into any Agreement or Compact with another State." A strict interpretation of this provision in the Federal Constitution precludes actual agreement between the several states or between the officials of the several states acting in their official capacity with a view of in any manner binding their respective states. Certain joint actions by officials of the several states have from time to time been held not to be based upon agreement between such states, so as to be in violation of the Federal clause, but it does not appear that actual agreement which would be alike binding on the part of states who might enter into it would be upheld. In so far as the matter concerns joint activities of our state boards of pharmacy, it is involved also with the receipt and distribution of funds necessary in connection with joint activity. It will be noted that Provision No. 7 while carefully avoiding what might

be construed as an agreement between the several states, or between the state boards of the several states acting for them, respectively, yet provides the means for active coöperation between them, and legalizes in that connection contributions and expenditures to serve their common purpose. It would remove from the field of correct coöperation between our state boards of pharmacy such doubts as now exist with reference to the legality of action and authority to act. The advisability of having a provision in our several state pharmacy laws, such as is contemplated by Provision No. 7, must rest in the need for legal and systematic coöperation between our several state boards. It presents for decision also, whether it is advisable to establish and maintain a Central Bureau through which the several boards would act in their relationship with each other, and which would be supported by them respectively, so as to permit its operation in a sound business-like manner. The question is, whether the existing National Association of State Boards of Pharmacy is so equipped as to properly serve its intended purpose, or whether it should be placed upon a more solid foundation with assured support, authorized by law in the several states.

JOSEPH P. REMINGTON: I move that this report be received and take the usual course, and that Chairman Freericks and the Committee be extended the thanks of this Section. Motion seconded.

H. C. CHRISTENSEN: These provisions have been given much thought by the individual members of the Boards, as well as by the Association as a whole and we are heartily in accord with the recommendations made. We realize that the National Association of Boards of Pharmacy, as constituted at the present time, can be improved, and we are glad to have the subject brought up. It is unfortunate that we are not able to discuss these provisions further. This is a legislative year, and I was in hopes we could get some of these recommendations in shape to answer some of the inquiries we are bound to have from different states. I hope something will be done, in spite of the fact that we cannot discuss the propositions, so that we may have the information to convey to those who will ask for it.

Motion carried.

A motion to adjourn was seconded and carried.

COMPULSORY HEALTH INSURANCE.

BY BERNARD FANTUS, M.D.

I note with regret the unfriendly attitude displayed by an editorial in the November issue of the JOURNAL toward the Health Insurance Bill drafted by the American Association for Labor Legislation, a movement which is in line with the latest developments in the care of the workingman's health in Germany, England, and in other countries of Europe. To characterize such legislation as charity is as erroneous, as to apply that designation to accident insurance laws or to compulsory education. Public Health Insurance could lead to a neglect of the insured only, if it is grossly mismanaged. It does not have that tendency in Europe, as far as I know. The neglect of human health and the lack of care of the sick, that exists at present, makes human life and health appear extremely cheap. We protect all other kinds of property by law upon law; we have so far done next to nothing toward protecting our most precious possession—namely, health. It is one of the boasts of the modern hygienist that health can be bought; and, to a certain extent, this is true. Sufficiently comprehensive legislation of the kind contemplated could not fail to take cognizance of the prophylaxis of disease. Human society is responsible for all the contagious and infectious diseases, for

all the occupational diseases, for many forms of intoxication and much of the results of physical violence, not to mention the injuries to health wrought by poverty and destitution. If society is responsible for all these things—and I believe it can be shown that it is—then it is the duty of society to apply the remedy. Health Insurance is a step in that direction. Nor is taking care of the sick altogether altruistic, for the sick are a constant menace to the well. To oppose this because it would be bad for our business is the lowest sort of ethics—the ethics of the jungle. Society does not exist that doctors and druggists may fatten on it. Doctors and druggists exist for the good of society. Health insurance does not enable society to dispense with our services, if it did, all the better for health insurance. It may lessen the income of our professions—and again I say so much the better for health insurance for it will lighten to an incalculably greater degree the burden that must be borne by shoulders too weak to bear it—the burden that is now borne by the sick poor.

SULPHO-TITANIC REAGENT FOR ALKALOIDS HAVING A PHENOLIC NUCLEUS.

That titanic anhydride, in various combinations, gives intense color reactions with phenolic substances, has been known for some years; Leuher and Crawford have published a method for the colorimetric determination of titanium based on the reaction it affords with thymol. This has suggested to the author to employ titanic anhydride for the identification of alkaloids containing a phenolic group. He has prepared a reagent for this purpose by heating coarse particles of rutile, native titanic anhydride, with strong sulphuric acid, at near the boiling point of the latter, for several hours. Only a very small amount of the rutile is dissolved. After cooling, the liquid, decanted from the undissolved rutile, furnishes the reagent, which is absolutely permanent. A few hundredths of a milligramme of an alkaloid, triturated in a porcelain capsule with a drop or two of this liquid, will yield a characteristic and often distinctive color reaction. More pronounced colors may obviously be obtained by adding a minute quantity of an alkaloid, or its salt, to two or three mils of the reagent and shaking. Under these conditions morphine gives a blood-red color; apomorphine, a reddish violet; oxydimorphine, a wine-red, intermediate between the above two tints; cupreine, an orange shade, resembling that of alkali bichromate; hordenine, deep orange; tyrosine, a color similar to that given by hordenine; adrenaline, a reddish brown color. Alkaloids devoid of a phenolic nucleus give no reaction. The reagent also forms a sensitive test for the presence of hydrogen peroxide.—G. Denigès, *Annales Chim. Analytic*, 1916, 21, 213; through *Pharmaceutical Journal.*

SECTION ON HISTORICAL PHARMACY, AMERICAN PHARMACEUTICAL ASSOCIATION

MINUTES.

The meeting of the Historical Section of the American Pharmaceutical Association was called to order at 9.40 A.M., September 8, 1916, in Hotel Chalfonte by Chairman Charles Holzhauer, who spoke in part as follows: There seems to have been some slip up last year regarding the election of the chairman of the Section. I was not at the meeting of the Section last year, but when I got home, I found that I had been made chairman of it. I wanted to resign, but was persuaded to keep the office and do the best I could with the assistance of the secretary. He agreed to take care of everything, and make a report to the Section, but he has married and is now on his wedding trip. We have no report from him, but we have a number of papers that have been contributed. So far as I am individually concerned, my contribution in the matter of historical pharmacy is confined to a very small compass.

When I went into business, I do not think that there was such a thing as a Pharmacopoeia in the whole town, or that anyone in the drug trade knew anything about it. The Dispensatory was the only thing we had to go by. Trade conditions were totally different from what they are to-day. I had the job of going downstairs and getting potash, which we bought by the tierce; and the boy had to break it up. I got the potash in my hair, on my face and inside my collar; and my hands had the skin off all the time. That was before we had concentrated lye, soda and potash put up in tin cans.

We are passing through another period now. We are seeing a change in the drug business; and what that change will result in, no one knows. Old timers, like myself, find themselves out of touch with present conditions, not only in the matter of profits, but also in the way of doing things. In my day, everything was made in the store. We had no pharmaceutical manufacturing houses, and tinctures were the great things used in prescriptions. It was before the days of fluidextracts; and I sometimes wonder whether it would not be a good thing for us to go back to the use of tinctures, much more than we are using them to-day. The repeats in prescriptions are those that partake of the old style of prescribing, and the best evidence of a prescription's answering the purpose for which it was given is having the patient come back to have it renewed repeatedly.

I remember that in those days malaria was rampant. We have no chills and fever now. We used to put up scores of prescriptions for it then. Cholera infantum, during the summer, was exceedingly prevalent. Mothers would bring their infants and wait for the prescription to be put up; we sometimes had to hurry for fear the child would die before we got the prescription ready.

The time is not distant when the men in the drug business will be divided into two classes, the pharmacists and the druggists, in the United States, as in Europe. The great effort that has been made in recent years to develop the professional side of pharmacy will bear fruit and result in an ethical pharmacy. The commercial side will be taken care of by those that run the drug store.

Mr. F. T. Gordon, of Philadelphia, has kindly consented to act as secretary in place of Mr. G. G. Marshall.

THE CHAIRMAN: The Historian's Report is next in order.

HISTORIAN'S REPORT.

The work of the Historian is largely that of curator. Since the last meeting of the Association, the office of the JOURNAL has been moved to Philadelphia and is now located in the rooms of the Philadelphia Drug Exchange in the Bourse Building.

Temporarily and perhaps for several years there is here ample room for contributions that are made to the Historical Section. The building is practically fire-proof and a watchman is constantly on duty. Under these circumstances the contributions made are as safe from fire as is possible without keeping them in a vault.

The Historian has in his office a large filing case for photographs and records, fifteen sectional bookcases and one sheet-iron cabinet, which he is glad to utilize for the Historical Section.

On behalf of the Association request has been made for space in the Historical Society Building of Philadelphia and also in the Ridgway Library Building on South Broad Street. President Howard B. French, of the Philadelphia Chamber of Commerce, has given the assurance and authorized the Historian to say to the Association that space will be found for 1200 volumes or more, if necessary. So with these accommodations the Historian is now in position to say, that whatever may be contributed will be safely filed and convenient for reference. While it would, perhaps, be better, if all this matter could be kept in the JOURNAL office, the library accommodations afforded will be safe and convenient, as well as sufficient for present needs.

Treasurer H. M. Whelpley has sent out slips, as enclosures in his correspondence, asking that members send photographs and brief biographical sketches to the Historian. Comparatively few have complied; some have sent photographs but no sketch. The list up to August 1, 1916, follows; titles are omitted:

PHOTOGRAPHS AND SKETCHES.

Albert Ackerman, Chicago.
Franklin M. Apple, Philadelphia.
Walter D. Adams, Forney, Texas.
William C. Alpers, Cleveland, Ohio.
H. V. Arny, New York.
Francisco Varada Adan, Camagiiey, Cuba.
Wilhelm Bodemann, Chicago.
Irwin Betzel, Corvallis, Ore.
P. W. Babcock, Lewiston, Me.
Joseph Caruso, Brooklyn, N. Y.
Antonio Caparo y Fernandez, Cienfuegos, Cuba.
H. C. Christensen, Chicago.
J. S. Chism, Wichita, Kans.
Theodore Campbell, Philadelphia.
C. Lewis Diehl, Louisville, Ky.
William F. Dedrick, Kingston, N. Y.
Aaron L. Feller, New York.
Henry M. Faser, Oxford, Miss.
S. W. Fairchild, New York.
C. E. Foote, Jackson, Mich.
H. C. Groves, Addesleigh, St. Albans, L. I.
William Horlick, Racine, Wis.
David Hooper, President British Pharmaceutical Conference.
John F. Hancock, Baltimore, Md.
Miss Alice Henkel, Washington, D. C.
Gustave Horstmann, Mount Vernon, N. Y.
Bolivar Jurado, Ancon, C. Z.
C. H. Jongejan, Grand Rapids, Mich.
Sophus Joergensen, La Conner, Wash.
Frederick B. Kilmer, New Brunswick, N. J.
Julius A. Koch, Pittsburgh, Pa.
J. M. Lindley, Des Moines, Ia.
P. H. Lindley, Havana, Kans.
L. A. Rudolph S. Lundgren, Youngstown, O.
Albert B. Lyons, Detroit, Mich.
N. H. Martin, New Castle-on-Tyne, England.
Ferd. A. Mueller, Indianapolis, Ind.
John C. Otis, Cincinnati, Ohio.
August F. Pence, Cleveland, Ohio.
Mrs. Bertha Leon De Groffe Peacock, Phila.
Josiah Comegys Peacock, Philadelphia.
Frank Richardson, Cambridge, N. Y.
Mrs. Josie Wanous Stuart, Minneapolis, Minn.
Louis Schulze, Baltimore, Md.
Samuel P. Sadtler, Philadelphia.
Frank C. Stutzlen, Elizabeth, N. J.
William J. Schieffelin, New York, N. Y.
J. Hungerford Smith, Rochester, N. Y.
Israel Schwartz, New York, N. Y.
Otto A. Wall, St. Louis, Mo.
W. H. Wyszyuski, Chicago.
Homer C. Washburn, Boulder, Col.
Joseph Weinstein, New York, N. Y.
E. E. Wyckoff, Brooklyn, N. Y.
Frederick J. Wulling, Minneapolis, Minn.

PHOTOGRAPHS.

Jose P. Alacan, Havana, Cuba.
Francisco Faquechel, Havana, Cuba.
C. S. Alexander, Weatherford, Texas.
C. W. Ballard, New York, N. Y.
Abraham Blank, New York, N. Y.
Frank R. Eldred, Indianapolis.
Robert A. Lehmann, New York, N. Y.
Alexander B. J. Moore, Montreal.
Joseph L. Mayer, New York.
E. L. Newcomb, Minneapolis, Minn.
Harold Neretin, New York, N. Y.
Otto Raubenheimer, Brooklyn, N. Y.
L. E. Sayre, Lawrence, Kans.
Mrs. Minnie M. Whitney, Kansas City, Mo.

The object of having these sketches and photographs need not be further explained than to say, that such records should be on file for the use of the Association. Not only do occasions arise when some of these are needed, but future generations will be interested in them.

We should have a collection of the badges used at the Annual Meetings of the Association, as well as those used by State Associations and related organizations. Also the programs of the meetings and functions, part of the Annual Conventions, should be obtained for the files.

Up to this year, it was impossible to have these collections for reference but now we can do so, therefore more contributions should be made from now on.

Last year the recommendation was adopted that an effort should be made to have a display of photographs of the preceding meetings. This will be impracticable, as in the rooms of the headquarters hotel permission cannot be obtained to tack these on the walls, and to have them rolled up and distributed will create confusion and interfere with the work of the Section, and possibly cause a loss.

It would be a splendid idea, whenever the Association meets in a City to request the local members to have an historical exhibit of pharmacy. This was undertaken this year by the Philadelphia College of Pharmacy, for the interest of the members who visited there, going from or to the Convention. The Association of the State where the Annual Meeting is held might be interested in fitting out a room in the headquarters. In that way we would become acquainted with the past and present of pharmacy in the respective States.

Perhaps of special interest, a photograph of Dr. Hermann Hager is exhibited and is a subject of the program of this Section. We have also a document, the property of the University of Wisconsin, evidencing a concession to an apothecary, issued in 1796, by the officers of the Bishopric of Eichstaedt. Dr H. M. Whelpley has contributed numerous clippings of historical interest, and also a number of photographs and mementos of previous meetings; some are here on display. We have a photograph of a water-color painting of the Blair Pharmacy, Philadelphia, established in 1828. A coöperative interest has been displayed by Mr. Seward Williams, of Chicago, in publishing an interesting booklet entitled "From Coast to Coast." The object of this publication was to have a record of the journey of the Association members to the "far west," and the present meeting was not forgotten, so the booklet is indeed well named.

The interest in the Historical Section is growing, as evidenced by the interesting program, and now with the opportunity of preserving historical matter, the work of the Section will increase in value and importance.

It is a pleasure to be of service and your instructions will be carried out to the best of my ability.

Respectfully submitted,

E. G. EBERLE.

On motion of Mr. Lemberger, the report of the Historian was received and referred to the Committee on Publication. Mr. Lemberger also made a motion that the Section approve of the recommendation of the Historian that the officers of the Section communicate with local branches and state associations to arrange for an exhibit of historical material at the annual meeting of the A. Ph. A. and that the Local Secretary at such place of meeting be notified of this request; and that a copy of the part of the Historian's report containing this recommendation be sent to the coming Local Secretary of the place at which the next annual meeting is to be held.

The motion of Mr. Lemberger was seconded and carried.

The next item on the program was the nomination of officers for the ensuing year. Mr. A. L. DuBois, of Catskill, New York, was nominated by Mr. Thos. F. Main, of New York City, for the office of Chairman; L. E. Sayre, of Lawrence, Kans., was nominated for Secretary; E. G. Eberle, of Philadelphia, was nominated as Historian. On motion of C. A. Mayo, of New York City, the nominations were closed.

Dr. H. M. Whelpley, of St. Louis, made a motion that the Historian be instructed to correspond with the secretaries of the State Associations, urging them to supply him with their annual badges and programs, and with such other material as might prove of historical interest. The motion was seconded and carried.

THE OFFICIAL BUTTON AND SEAL.

Dr. Whelpley, feeling that the minutes could not be too replete with historical records, stated that the official badge of the Association is a button, the result of an idea originated by Mr. G. M. Beringer, Sr., of Camden, N. J. Mr. Beringer explained that the acting secretary, Mr. Gordon, had brought it to his attention. A series of designs were submitted, and the one in use selected. Mr. Gordon then added the information, that he had made a motion at the Nashville meeting that a button be adopted containing the coat of arms or seal of the Association. Mr. Beringer, Mr. England and the speaker had been appointed a committee to work up the idea, with the result that the present button was recommended. The matter was first acted on by the House of Delegates and then brought before the General Session at the Nashville meeting, the button being officially adopted. Mr. Beringer added that the first official appearance of the button was at the Nashville session, where it was used by him, while President, as a seal for his papers.

PRESENTATION OF HERMANN HAGER PICTURE.

The next matter on the program was the presentation of a life-sized picture of Hermann Hager, dedicated by the New York Deutscher Apotheker Verein, by Otto Raubenheimer, of Brooklyn, who spoke as follows:

When the New York Deutscher Apotheker Verein decided to present to each college and each association in the United States, that had made Doctor Hager an honorary member, a copy of this picture, the mission of making the presentation was given to me. It has already been fulfilled in connection with the Philadelphia College of Pharmacy, the Massachusetts College of Pharmacy and the Chicago College of Pharmacy, and is to be fulfilled to-day in connection with this Association by presenting a photograph of Hager to the Historical Section of the American Pharmaceutical Association, which was good enough to elect Hager as an honorary member in 1868.

The biography of Hager[1] has been fully published, and the publications are obtainable, so we do not need to go into details. I have no doubt that this photograph, if properly displayed, will instil the younger generation, and also the pharmacists in general, with more love for their profession, and likewise give them an idea of what can be done in pharmacy, especially as Hager educated himself, passed the State Board examination without having had any college training, and contributed more to the literature of pharmacy than perhaps any other man that

[1] See p. 2, January issue, JOUR. A. PH. A., 1916.

has ever lived. He wrote three volumes that are still considered the best handbook on pharmacy that the world has.

Therefore, I take pleasure in presenting this photograph to the Historical Section of the American Pharmaceutical Association; and I have no doubt that the Historian will take care of it and preserve it in his office, and later in the building of the Association.

A motion was made by C. A. Mayo that the portrait be accepted and preserved, and that the thanks of the Association be sent to the donor. The motion was seconded and carried. The Chairman, on behalf of the Association, then accepted the photograph and thanked the donors.

The following papers were then read, some given only in abstract; the discussions were limited on account of the lengthy program and only one session being provided. They were referred to the Publication Committee:

Reminiscences of an Old New York Pharmacist, by A. L. DuBois.
The Chemical Laboratory: Side Lights in Its Making, by Frederick E. Niece.
Evolution of the Membership Certificate of the American Pharmaceutical Association, with exhibit of the earliest type of the Certificate, by John F. Hancock.
History of the New Jersey Pharmaceutical Association, by E. A. Sayre.
Some Exponents of Pharmacy, by John F. Patton.
Pharmacy in New Jersey in the Sixties, as Recalled by an Apprentice, by L. E. Sayre.
Early Experience in the Drug Trade, by Joseph L. Lemberger.
History of Mercury, by Otto Raubenheimer.
Ten Years of New Jersey Pharmaceutical Association, by J. F. Llewellyn.
Pharmacy and Medicine of Sir Walter Scott, by Arthur Linton.
Happenings in Pharmacy a Century Ago, by Otto Raubenheimer.
Historical Fragments, by Edward Kremers.
Reminiscentiae, by Thos. D. McElhenie.
A History of the Old Firm of Hance Bros. & White, by A. M. Hance.
The Blair Pharmacy, Established 1828, by Robert P. Fischelis and Henry C. Blair.

Speaking for the motion to refer the paper by A. L. DuBois to the Publication Committee, Mr. C. A. Mayo moved a vote of thanks to Mr. DuBois for having set such a good example to those just beginning their careers, and having shown what a stretch of time an active man's career can cover.

In seconding the motion Dr. William C. Anderson called attention that Mr. DuBois had become a Life Member of the American Pharmaceutical Association by virtue of thirty-seven years' membership in it.

Mr. W. L. Cliffe, in speaking on the motion to refer Mr. J. L. Lemberger's paper to the Publication Committee, referred to the long connection of the author and his valuable services to both the American Pharmaceutical Association and Pennsylvania Pharmaceutical Association.

The paper by Dr. Edward Kremers was reviewed in abstract by E. G. Eberle, and the parchment of a concession to Apothecary Ignaz Biechele was exhibited.[2]

On motion of Mr. Hancock, duly seconded, the Secretary was instructed to cast the ballot of the Section for the unanimous election of the officers nominated, who were as follows: *Chairman*, A. L. DuBois, Catskill, N. Y.; *Secretary*, L. E. Sayre, Lawrence, Kan.; *Historian*, E. G. Eberle, Philadelphia.

Adjourned at 2.30.

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[2] See p. 1243, November issue of the JOURNAL, 1916.

THE A. PH. A. MEMBERSHIP.

BY WILLIAM MITTELBACH

According to the list of members published in the 1904 Year Book and revised to April 1, 1916, we now have 2490, distributed throughout the 48 states, the territory of Alaska, the islands of Cuba, Porto Rico, Philippine Islands, Dominion of Canada and Europe. Over 50 percent of the membership reside in 38 of the largest cities. Compared with a similar tabulation made in 1904 the information to be obtained is interesting and of some value to the Membership Committee in its work.

	1904	1916	
Alabama	5	17	
Alaska	0	3	
Arizona	1	4	
Arkansas	18	24	
California	38	94	(San Francisco and Los Angeles 44)
Colorado	13	55	(Denver 33)
Columbia Dist	36	34	(Washington City 33)
Connecticut	30	18	
Delaware	2	7	
Florida	25	21	
Georgia	36	18	
Hawaiian Islands	2	1	
Idaho	1	6	
Illinois	95	179	(Chicago 119)
Indiana	36	78	(Indianapolis 25)
Iowa	48	56	
Kansas	15	25	
Kentucky	29	39	(Louisville 17)
Louisiana	28	26	(New Orleans 19)
Maine	25	28	
Maryland	65	73	(Baltimore 56)
Massachusetts	84	140	(Boston and suburbs 60)
Michigan	46	106	(Detroit 97)
Minnesota	28	47	(Minneapolis and St. Paul 35)
Mississippi	8	9	
Missouri	129	116	(St. Louis and Kansas City 92)
Montana	3	17	
Nebraska	16	42	(Omaha 15)
Nevada	1	2	
New Hampshire	10	6	
New Jersey	61	92	(Newark and Jersey City 21)
New Mexico	2	6	
New York	165	299	(New York, Brooklyn and Buffalo 216)
North Carolina	13	17	
North Dakota	4	8	
Ohio	88	137	(Cincinnati, Cleveland and Columbus 102)
Oklahoma	9	13	
Oregon	5	18	(Portland 8)
Pennsylvania	147	229	(Philadelphia and Pittsburgh 151)
Philippine Islands	0	6	
Porto Rico	0	2	
Rhode Island	16	16	(Providence 12)
South Carolina	7	5	

	1904	1916	
South Dakota	8	26	
Tennessee	10	49	(Nashville 22)
Texas	20	60	(Dallas, Houston and San Antonio 16)
Utah	1	8	
Vermont	9	15	
Virginia	16	32	(Richmond 9)
Washington	10	38	(Seattle 18)
West Virginia	1	26	(Morgantown 11)
Wisconsin	23	37	(Madison and Milwaukee 21)
Wyoming	0	2	
Canada	20	17	
Cuba	0	29	(Havana 21)
Europe	11	12	

Grouping the states we find from the foregoing tables, our present membership located as follows:

734 in the New York group (N. Y., Pa., N. J., Md., Del., and D. C.).
537 in the Lake group (Ill., Ind., O., Mich., and Wisc.).
329 in the South-West group (Mo., Kan., Cal., Ark., Okla., La., Tex., Ariz., and N. M.).
233 in the Southern group (W. Va., Va., N. C., S. C., Ga., Fla., Ala., Miss., Ky., and Tenn.).
223 in the New England group (Me., N. H., Vt., Mass., Conn., and R. I.).
198 in the North-Western group (Minn., Mont., N. D., S. D., Wy., Ia., and Neb.).
167 in the Pacific group (Wash., Ore., Idaho, Nev., Utah, and California).
69 (the remainder) in foreign countries.

Seven states—New York, Pennsylvania, Illinois, Massachusetts, Ohio, Missouri, and Michigan—have 1206 or about one-half the entire membership. New York and Pennsylvania alone have 528 or more than one-fifth. Eleven of the states each have less than 10 members. In the states bordering the South Atlantic the membership has fallen off in the 12 years.

It is clearly evident that wherever meetings were held, the members living in the immediate surroundings stayed with the Association to a much greater extent, than in territory distant from meetings. This is clearly shown by Missouri's present enrollment. It is at this time 116. In 1905 or immediately after the Kansas City meeting we had 117. Previous to the St. Louis meeting (1901) we had only 51. Other states having a large membership show a like condition. Now if the Membership Committee was placed on a commercial working basis, as it was about 15 years ago, and the Committee given authority to spend sufficient funds to cover its legitimate expenses, I see no reason why the membership should not be doubled in the next 5 or 6 years.

In these days when a commercial value is placed upon everything, membership in our Association is also looked upon, more or less, as an investment, or business proposition, and we must show that it is worth the price.

SECTION ON COMMERCIAL INTERESTS, AMERICAN PHARMACEUTICAL ASSOCIATION

HISTORY OF SUBSTITUTES AND SUBSTITUTION.*

BY OTTO RAUBENHEIMER.

Everything has its history, even substitution! Most writers trace the origin to Claudius Galenus of Pergamos and later of Rome. However, Dr. Felix von Oefele, the celebrated Assyriologist and Egyptologist, now in New York City, and also a member of the A. Ph. A., has made further researches, which are quoted by Schelenz in *Geschichte der Pharmazie* and by Tschirch in his *Handbook der Pharmakognosie*. Oefele was also kind enough to give me the additional information that records or substitutes and substitution existed in old Assyria, namely, in the library of King Sardanapalus, who reigned from 668 to 626 B. C. Ashurbanipal, which is the Assyrian name, the warrior King, destroyed innumerable cities of high civilization in Babylonia, Elam and other countries. He tried to make Nineveh the center of the civilized world, especially by one of his aims, namely, the creation of a large library of copies of older texts, collected in the destroyed cities. The principal medical and pharmaceutical texts of Sardanapalus' library were copies from the old city Nippur, and as ruins Niffer, which was excavated by the University of Pennsylvania. About twenty thousand of these clay tablets from the library of Nineveh are preserved in the British Museum, and more than one thousand contain medical and pharmaceutical matter. The Niffer tablets now at Philadelphia show that the Assyrian King had not left many of the original scientific texts at Nippur.

Dr. Oefele discovered that some tablets contain a special form of tabulation, namely, in two columns. **The drugs mentioned in the left column can be substituted by drugs in the right column.** The drugs are not mentioned by name, they are stated as parts of the body of a god or his devoted animal. A group of alternating substitutes could have the same name of the god or animal.

Dr. Felix von Oefele deserves credit for the correct translation and explanation of the old medical papyri, having first brought this subject before the Section of History of Medicine at the meeting of the German Naturalists at Duesseldorf in 1898. Inasmuch as several plants of almost identical properties are dedicated and named after the same deity, a correct interpretation is not an easy task. For instance, *Succus Anethi recenti expressus* was named *Blood of Ibis* and *Semina Anethi* were called *Hairs of Kynocephalus*. Ibis and Kynocephalus were both animals devoted to Thoth, *i. e.*, the Egyptian Hermes. Artemesia was called *Heart of Bubastis* and *Blood of Hephaestus*.

Such synonyms were undoubtedly originated by the priest-physicians in Egypt to conceal the identity of the drug from the laity. Squill grew in the vicinity of Pelusium, where dropsy was endemic. The evil god Typhon was said to live near by in a swamp, consequently, squill received the synonym *Eye of Typhon*.

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* This paper, the one following on "*Ersatz-Praeparate*," by H. Engelhardt, and "*Quid pro quo* in U. S. P. IX," by Otto Raubenheimer, constituted part of a Symposium on Substitution, prepared for the Section on Commercial Interests, A. Ph. A., Atlantic City meeting, 1916.

That even a synonym-lexicon existed as early at 200 B. C. is proven by the publication of a Greek papyrus by Leemann and Dieterich in 1888. The *Papyrus Brugsh* dating to 1500 B. C. also contains a small synonym-lexicon.

Dioscorides (abt. 50 A. D.) in his materia medica also gives a large number of synonyms.

In those early days substitution was frequently demanded by the patients themselves, as can be seen from the following incident told in Friedlaender's *Roman Life and Manners:*

"As the opinion was that the dearest medicines were the most efficacious, and the rich, therefore, would have nothing cheap, the apothecary business was extremely profitable to the practitioner. One rich man, whose slave Galen had cured of a dangerous tumor, asked for the recipe, saw that its ingredients were cheap, and demanded something not fit for beggars. Galen then taught him a more expensive recipe."

Another example of substitution is the following: Precious stones were largely used in medicine in ancient times. For the plutocrats the most expensive were used, as, for instance, the emerald as a green stone. For the middle class a less precious stone was taken, probably some form of chrysoprase, and the poor received ordinary malachite, or the still cheaper green Egyptian porcelain. Here is still another example: Sapphire was precious and expensive, *Lapis Lazuli* was less expensive and Babylonian Blue Glass was cheap.

These different qualities in medicine according to circumstances of three milleniums ago have survived up to now in the expressions *optima*, the best; *vera*, the true; *communis*, the ordinary; and *canina*, the bad (good for the dogs), adulterated and useless.

Claudius Galenos of Pergamos, Asia Minor (130–200), the celebrated physician at Rome, prepared a list of *Antemballomena* or substitute drugs. He was called to a patient on the death-bed and wanted to administer *Semen Acanthii*. Unable to get same in a hurry, he took in place *Semen Lychnidis*. Thereupon, his colleagues in Rome asked him to prepare a list of substitute drugs, which is one of the oldest and most complete records of substitution in the Greek language.

A later legend tells that Galenos found older lists of substitutes and copied same. The later physicians believed these lists to be compiled by Galenos.

The works of Galen remained the undisputed medical authority for about 1400 years until a young Flemish physician, Andreas Vesalius (1514–1564), discovered grave mistakes in Galen's anatomy and until Paracelsus (1493–1541) became the iconoclast or image breaker of the old medical school.

The *Antidotarium* of Nicolas Praepositus, the director of the celebrated medical school at Salerno about 1100, contained a *Tractus quid pro quo*, consisting of a list of substitutes, arranged alphabetically.

Johannes Actuarius, court physician at Constantinople at the end of the 13th century, wrote a *Quid pro quo* as an appendix to his works.

The *Ricettario Fiorentino* (1498), one of the early pharmacopoeias, contained a *Tractus quid pro quo.*

The first official pharmacopoeia in Germany, namely the *Dispensatorium of Valerius Cordus*, published in Nuremberg in 1546, contains an appendix, *De Succedaneis quid pro quo*, in which the following are some of the substitutes:

Bitter Almond	replaced by Wormwood
Colocynth	replaced by Ricinus (seed)
Ginger	replaced by Pyrethrum (root)
Zedoary	replaced by Aristolochia

These examples no doubt prove that the old books on medicine and the dispensatories contained regular lists of substitutes. Why? The answer is threefold.

(1) As a matter of convenience for physician, pharmacist and patient.

(2) As a matter of necessity.

(3) Because frequently certain drugs were unobtainable, as commerce to the Orient, which was the source of most drugs, became interrupted. Do not the very same conditions exist to-day?

So much for the origin of substitutes and substitution. Now as to the step taken against substitution. The Edict of Emperor Frederic II in 1227, which can be justly considered the first pure food and drug law, and which separated pharmacy and medicine, also contains a provision that the *stationarii* (because they were stationed in monasteries) and the *confectionarii* (the forerunners of our confectioners) must prepare the medicines according to the prescription of formula and must not cheat by the use of *Quid pro quo*. This law forbade all substitution, under penalty of confiscation of all goods, if done without consent of the prescribing physician.

Saladin of Ascolo or Aesculanus, the celebrated *Artium et Medicinae Doctor* in Salerno, states in the 4th part of his book, the first modern pharmacy book, *Compendium Armamentarium*, that the apothecary has no right to take any *Quid pro quo* without the consent of the physician. The pharmacist is also ordered to take the very best variety or species of a drug, when same is merely ordered by its generic name!

In the first half of the 17th century, Dr. Guy Patin, dean of the Medical Faculty at Paris, attacked the pharmacists in a sarcastic manner and accused them of substitution.

Such complaints were repeated from time to time and were the cause that pharmacists received the name *Quidproqueur*. This cry of substitution has been kept up ever since, more or less unfounded!

Let us consider, as a matter of history, the advantages of substitutes, advantages which have made it worth while to write the history of substitution.

USE OF INDIGENOUS DRUGS.

Strange as it may seem, there are 6 **different** nations in 6 **different** parts of the world who use 6 **different** plants or drugs as food and drink. However, these 6 drugs belong to one group, the purin group, and they contain the same active constituents, namely, Caffeine. I refer to the coffee of the Arab, the tea of the Chinese, the cola of the African, the cacao of the Central American, the guarana of the Brazilian and the *maté* of the South American. Unknown to each other, these different nations used these different drugs for the same purpose, namely, as a stimulant!

The Chinese do not employ any other drugs but those indigenous to China. It has been the desire of all nations to use domestic drugs as their materia medica.

In fact Paracelsus even went so far as to claim that it was impossible to cure a disease in Germany with drugs grown on the Nile!

Much has been written urging each country to make use of the indigenous drugs and to replace foreign drugs with domestic ones. One achievement along these lines is the cultivation of drugs, that is, the **substitution of home-grown drugs for imported ones.** As examples we have American Cannabis in place of Indian Cannabis, American Belladonna in place of the European, American Peppermint in place of the English-grown.

SYNTHETIC SUBSTITUTES.

The advances made in chemistry have been wonderful! Ever since Friedrich Woehler synthetized urea by heating together ammonium chloride and silver cyanate, organic chemistry has produced many synthetic or artificial products, for instance, salicylic and benzoic acid, methyl salicylate, artificial oil of mustard and oil of rose, camphor, indigo and rubber.

Many alkaloids are now manufactured synthetically, as codeine, piperine, cocaine, caffeine and adrenaline. These synthetic products are identical with the natural ones, excepting that on account of their high purity, they do not act upon polarized light.

NEW DISCOVERIES.

In looking for substitutes chemistry has been enriched with many discoveries. One of the oldest records along this line is the discovery of sugar in the beet and the resulting beet sugar industry in 1747 by the German apothecary Marggraff, in looking for a substitute for the expensive cane sugar. Another example is the discovery of the beautiful aniline dyes, which have almost replaced the old vegetable dyestuffs.

CHEMICAL SUBSTITUTION.

This theory was introduced by the French chemist Dumas and means that the hydrogen atoms in organic substances can be removed one by one from their molecules, other atoms being substituted for them. Although this is a different kind of a substitution, it belongs to this subject just the same.

AMERICAN MINERAL WATERS.

Owing to the war it is extremely difficult to obtain foreign mineral waters or to visit the spas themselves. Prof. Felix von Oefele deserves credit for making a very valuable compilation of the principal foreign mineral springs together with their equivalent in this country. Nothing but a substitution and a valuable one at that! This paper was published in the *Bulletin of the College of Jersey City*, Vol. II, No. 3, January 15, 1915, and JOUR. A. PH. A., May 1915, p. 617. It was also highly commented upon by James H. Collins in "Raising Our War Babies," in the *Saturday Evening Post* of April 29, 1916, in which he states: "Altogether we have found good substitutes for about 100 of the foreign *inbads* and *badofs*.

SODIUM SALTS IN PLACE OF POTASSIUM SALTS.

Owing to the great scarcity of potassium salts and the consequent enormous increase in price, the respective sodium salts have been recommended as substitutes. Besides their lower price, sodium salts have two further advantages over potassium salts, namely, a smaller molecular weight and greater solubility. One

large chemical manufacturer in the United States has made an active propaganda among physicians and pharmacists in order to give sodium salts the preference.

SUBSTITUTES IN PHARMACOPOEIAS.

That pharmacopoeias do not hesitate to use and to authorize substitutes can be seen from the following:

Deutsches Arzneibuch 5, Ausgabe, 1910, states in spaced type, very prominently: "Tinctura Ipecacuanhae shall be dispensed when Vinum Ipecacuanhae is ordered." "Magnesium Sulfuricum, Natrium Carbonicum and Natrium Sulfuricum: the dry or exsiccated salts shall be used instead of the crystalline in mixtures of powders."

In another paper I present the *Quid pro quo* in U. S. P. IX.

The most extended form of substitution exists in the British Empire. The principal object of the *Indian and Colonial Addendum* is the substitution of drugs indigenous in that particular part of the British Empire. The following are some of the substitutes: Arnica flowers for the root in the North American colonies; species of Datura for Belladonna leaves in East and West Indies. Embelia fruit for Kousso and Male Fern in East India. Cottonroot bark for Ergot in East and West Indies and North American colonies.

The new British Pharmacopoeia, 1914, which is said to be adapted to all parts of the British Dominions, also contains a great number of notes, in small type, at the end of the monographs, sanctioning substitution of a similar drug, for instance, under Kino and under Butea Gummi: "In India and the Eastern Divisions of the Empire, Butea Gum may be employed in making the official preparations for which Kino is directed to be used." Under *Gummi Indicum,* but not under *Acaciae Gummi,* this statement is made: "In India, etc., Indian Gum may be employed in making the official preparations for which Gum Acacia is directed to be used, one part of the former being taken for every two parts ordered of the latter."

In Appendix XII of the new B. P. on Alternative Preparations sanctioned for use in Tropical, Subtropical, and other Parts of the British Empire, I find the following:

"*Oleum Olivae.*—In India, and in the Eastern, African, Australasian and North American Divisions of the Empire, Arachis Oil or Sesame Oil, but no other oil or fat, may be employed in making the official Liniments, Plasters, Ointments and Soaps for which Olive Oil is directed to be used."

If this is not advocating, in fact, soliciting substitution, then what is it?

SUBSTITUTES FOR DRUGS.

Owing to the war and the resulting scarcity of imported drugs, the pharmaceutical and medical journals of Germany and Austria have published lists of substitutes for vegetable, animal and mineral drugs. Truly, not a great deal of difference from the *Quid pro quo* lists of 2 millenniums ago!

Dr. H. Engelhardt, of Baltimore, was good enough to abstract formulas for *Ersatz-Praeparate* of Oils, Fats, Ointment Bases, Lanolin, Vaseline, Glycerin and Soaps.

SUBSTITUTE FORMULAS FOR SPECIALTIES.

My paper on this subject, published in JOUR. A. PH. A., August 1915, p. 952,

describes the two principal booklets, namely, the *Formular des Luxemburger Apotheker Verein* and the *Sammlung von Vorschriften fuer Zubereitungen zum Ersatz von Spezialitaeten des Feindlichen Auslandes* (Collection of Formulas for Substitute Preparations of Specialties from Belligerent Countries).

This shows the trend of substitution in Germany. According to the Kaiser's proclamation on July 31, 1915, pharmacists and manufacturers are asked to replace foreign specialties by those **made in Germany.** After May 1, 1915, no more foreign names or labels can be used and according to *Pharm. Ztg.*, Aug. 7, 1915, p. 511, a druggist was convicted to 2 days in jail for using labels *Eau de Javelle* and *Eau de Botot.*

Verily we live in an age of substitution!

However, let us get away from that ill-smelling word Substitution, and adopt one which sounds much better, namely, **Parallel Drugs and Chemicals.**

PARALLEL DRUGS.

This term has been first introduced in 1897 by Prof. Carl Hartwich, of the University of Zurich, in his book, *Die Neuen Arzneidrogen.* Prof. Alexander Tschirch, of the University of Berne, the world's greatest authority on pharmacognosy, has helped to popularize this word.

The writer has done likewise and has published an editorial in the *Bulletin of the College of Jersey City,* Vol. III, No. 3, Feb. 1, 1916, which has also been reprinted in the monthly *Drug Bulletin* of the Department of Health, City of New York, for July, 1916.

Inasmuch as this editorial also contains an appeal to pharmacists, I shall use it as a finish in my paper on *History of Substitutes and Substitution.*

The substitution of one drug for another has been practiced from the earliest times. Was it not Claudius Galenus (130–200 A. D.), the great Roman physician-pharmacist, who was about the very first to prepare a lengthy list of drugs, *Quid pro quo,* a list which remained in use until about the 16th century?

These substitute drugs, which in Latin were called *Succedanea* or *Antemballomena,* were considered of such great importance that they were included in the old pharmacopoeias. Of late years the substitution of a drug by a similar drug, especially on prescriptions, has even been forbidden by law. This is justly right, because the physician "wants what he wants when he wants it."

However, at the present time, owing to the war, the supply of a great many drugs and chemicals from Germany—and the Fatherland seems to be the only producer of same, especially the coal-tar products—has been entirely cut off by Great Britain, the so-called *ruler of the seas.* The great scarcity of some drugs and chemicals and the high price of others suggest that substitution will again come to life. Not an underhanded, illegitimate substitution, without the knowledge of physician or patient, but a perfectly legitimate substitution. In order to get rid of that ill-smelling word **Substitution,** the editor proposes the term **Parallel Drugs and Chemicals** in place of **Substitute Drugs.**

Now is the right time for the pharmacist to use his knowledge of pharmacy, chemistry and materia medica and to inform the physician of **Parallel Drugs and Chemicals.** Now the pharmacist has a golden opportunity to prove to the medical profession that "Pharmacy is the handmaiden to medicine."

Will he do it?

ERSATZ-PRAEPARATE.

BY H. ENGELHARDT, PH.D.

FATS AND OILS.*

The use of enormous quantities of fats and oils in Germany for the manufacture of glycerin and nitroglycerin has made these commodities very scarce, and numerous preparations have been recommended as substitutes for these vehicles in pharmaceutical preparations.

In the *Pharm. Zeitung*, 1915, page 799, it is pointed out that in the German apothecaries entirely too much lard and oil is used. An average of approximately 200 Gm. of lard and edible oils is daily used in each drug store. In the 6200 drug stores in Germany this would amount to 1200 kilos daily or 36000 kilos per month. A good deal of this fat could be substituted by mineral oils, or by oils which are not edible.

It is further recommended by Zickner, *Pharm. Zeitung*, 1916, page 167, that in order to avoid the use of edible oils, ointment bases, etc., prepared as follows may be used: Liquid paraffin 460 parts, olein 90 parts, rape oil 130 parts, strong ammonia water 150 parts, dilute lime water ($^1/_2$: 1) 175 parts, or vaseline 535 parts, rape oil 100 parts, olein 85 parts, strong ammonia water 135 parts, dilute lime water 145 parts. In both prescriptions the mineral fats are heated with the olein and after cooling to 30° the mixture is shaken with the ammonia water. Both ointments are well miscible with chloroform and are stable.

LARD.

As substitutes for lard, Lohmann, *Pharm. Zentralh.*, 1916, page 96, recommends a mixture of anhydrous wool fat 30 Gm., solid paraffin 250 Gm., and liquid paraffin 785 Gm., while Schnabel, *Pharm. Zentralh.*, 1916, page 54, recommends a substitute called Paralan consisting of anhydrous wool fat 20 parts, solid paraffin 20 parts, liquid paraffin 60 parts.

Stier, *Pharm. Zeitung*, 1916, p. 131, recommends the following product as substitute for lard: Solid paraffin and liquid paraffin each 150 parts, or yellow vaseline 380 parts, and 100 parts of anhydrous wool fat are mixed with 370 parts of a warm 5 percent gelatin solution. The mass is stirred until cool. With this base most ointments can be prepared. Insoluble substances are triturated with the vaseline, while soluble substances such as potassium iodide and boric acid are dissolved in the hot gelatin solution.

OINTMENT BASES.

Zickner, *Pharm. Zentralh.*, 1916, p. 96, recommends the following products: I—For eye salves, lanolin should be used. II—For ointments which contain only fats but no water a base prepared from solid paraffin 1 kilo, liquid paraffin 4.5 kilos and anhydrous wool fat 0.5 kilo. III—For ointments which allow a certain amount of water, a mixture of liquid paraffin 4.5 kilos, solid paraffin 1

* This is a second article of a Symposium on Substitution presented at the meeting of Section on Commercial Interests, A. Ph. A., Atlantic City meeting.

kilo, white wax 40 Gm., anhydrous wool fat 0.4 Gm., and water 450 Gm. may be used. For preparing mercurial ointment, ointment base No. II with an addition of 30 Gm. of wax is recommended. For preparing ointment of potassium iodide, Dr. Sch. uses the following ointment base: Cearin 215 Gm., liquid paraffin 643 Gm., potassium iodide 104 Gm. and distilled water 78 Gm. Another ointment base is recommended by Bedall, *Apoth. Zeitung*, 1915, p. 647. Solid paraffin 200, liquid paraffin 800 and lanolin 1000 are heated and after cooling 400 water are added. For preparing a 10 percent mercurial ointment a mixture of 6 parts of tallow and 4 parts of liquid paraffin is used.

GLYCERIN.

The scarcity of glycerin in Germany is produced by the use of large quantities of glycerin in making explosives and by heating the kettles in the field kitchen in glycerin baths. Greenbaum, *Pharm. Zeitung*, 1915, p. 505, recommends that glycerin for the latter purpose be replaced by paraffin which is just as bad a conductor of heat as glycerin and does not need to be renewed as often.

The *Pharm. Zeitung*, 1915, p. 511, quotes an article appearing in the *Zeitschrift Neust. Erf. u. Erf.* as follows: As substitutes for glycerin, preparations made from substances of both vegetable and animal origin are recommended, substances which contain a great percentage of mucilage such as agar agar, Irish moss, gelatin, isinglass, Iceland moss, linseed, marshmallow root, salep and tragacanth. Agar agar in rather concentrated solutions is not at all unctuous. Irish moss preparations again are rather unctuous but make the skin rough. Gelatin solutions are sticky. All preparations obtained from the above substances have the disadvantage of not being stable. They may be rendered stable by adding to the extract about 30 percent of glycerin.

Gissinger, *Pharm. Zeitung*, 1915, p. 120, recommends a mixture of gelatin 6 parts, rose water 300 parts, boric acid 10 parts, tincture arnica 30 parts, and glycerin 645 parts. Instead of tincture of arnica other perfumes may be used.

Glycerin ointment is obtained by triturating 16 parts of tragacanth with 375 parts of glycerin and then adding 375 parts of water.

For substituting glycerin in Kaolin-Glycerin-Ichthyol Paste, a preparation which is extensively used in the treatment of furunculosis, Unna in the *Berliner Klin. Woch.*, 1915, Nos. 40 & 41, recommends kaolin 40 parts, syrup 30 parts, calcium chloride solution (1 plus 2) 20 parts, ichthyol 10 parts. As substitutes for Iodoglycerin a mixture of tincture iodine 30 parts and syrup 20 parts is given. For Syrup-Zinc-Gelatin: Gelatin 15 parts, zinc oxide 15 parts, syrup 25 parts, distilled water 45 parts. This product is also marketed with the addition of 2 parts of ichthyol.

Naturally a good many preparations of doubtful value have been exploited as substitutes for glycerin; thus Mannich and Schirmer, *Apoth. Zeitung*, 1915, p. 713, report on a product called Lempellin which is a thin solution of a mucilaginous substance rendered stable with boric acid, Substitute for Glycerin, Henkel & Co., which is a sugar solution, and Cosmetic Glycerin Substitute, Henkel & Co., which is more or less inverted syrup.

Algin, according to *Pharm. Zeitung*, 1915, p. 37, is a product obtained by allowing kelp to macerate for 24 hours with caustic soda solution. The mucilagi-

nous mixture is precipitated by alcohol, methyl alcohol, mineral acids and some salts.

WOOL FAT.

Quite a number of substitutes for wool fat, the ideal base for making ointments, have been suggested; v. d. Wielen, *Pharm. Zeitung*, 1916, p. 66, recommends a mixture of 20 parts of white wax, and 80 parts of linseed oil, a mixture which is able to take up 170 parts of water. Ten Velthuis (*Ibid.*) reports on good results obtained with a mixture of 10 parts of yellow wax, 25 parts of wool fat, 45 parts of yellow vaseline and 25 parts of water or a mixture of yellow wax 15 parts, yellow vaseline 60 parts and 35 parts of water. Segerstedt, *Svensk Farm. Tidsk.*, recommends a product called Cerolanum. He describes two preparations, anhydrous cerolanum consisting of 7 parts yellow wax, 15 parts of wool fat and 78 parts white vaseline and cerolanum which is a mixture of 70 parts of anhydrous cerolanum and 30 parts distilled water.

Blatz, *Pharm. Zeitung*, 1905, described a substitute for wool fat named Cetosan which quite recently is mentioned by Segerstedt, *Apoth. Zeitung*, 1915, p. 643 and 706, under the name of Cenolin. It is recommended as a substitute for wool fat and consists largely of cetyl alcohol. It is obtained in the following way according to a process worked out by Segerstedt and Süderberg: 100 Gm. of spermaceti are heated in a capacious enamelled dish with 500 Gm. of alcoholic potassium hydroxide (25 percent) until saponification has taken place. The warm mass is then poured into 10 times its volume of warm 10 percent sodium chloride solution when the cetyl alcohol will gradually rise to the surface. It is then collected on a filter washed with hot water, in order to remove palmitic acid, until the wash water does no longer show a reaction of chlorine. The mass is then allowed to drain and is gently pressed. It still contains about 30 parts of water and small amounts of soap which, however, do not interfere with its use in preparing ointments. In order to prepare anhydrous cenolin 7 parts of cetyl alcohol, 10 parts of wool fat and 83 parts of vaseline are mixed. For making cenolin 70 parts of anhydrous cenolin are mixed with 30 parts of distilled water. Anhydrous cenolin easily takes up 50 parts of water.

v. d. Wielen, *Pharm. Weekbl.*, 1915, p. 773 to 775, further reports that a mixture of vaseline, wax, in which caoutchouc is dissolved at first seemed to be very suitable as substitute for wool fat. Further experiments, however, showed that the caoutchouc produces too great a stickiness. By the addition of water the consistency of the mass does not become satisfactory. Hegland therefore recommends a mixture consisting of 20 parts of linseed oil, 20 parts of vaseline and 5 parts spermaceti, a mixture which is able to take up from 70 to 80 parts and even 100 parts of water without producing too thin an ointment. The disagreeable odor of linseed oil may be masked by the addition of ethereal oils such as lemon oil, lavender oil, etc.

For an Eucerin-Glycerin substitute the *Pharm. Zentralh.*, 1915, p. 672, recommends a mixture of anhydrous eucerin 50 parts, calcium chloride 50 parts.

ARTIFICIAL VASELINE.

For making artificial vaseline, Anselmier, *Pharm. Zeitung*, 1916, p. 66, recommends mixing yellow wax 0.3 part, solid paraffin 0.7 part and yellow vaseline 9 parts.

TINCTURE IODINE.

As a substitute for tincture of iodine a 5 to 10 percent alcoholic solution of tannic acid is recommended by Schmerz in the *Pharm. Zeitung*, 1916, p. 22.

SOAP.

The scarcity of fats naturally has induced the German chemists to look for substitutes of fats in soaps. Thus the *Seifenfabrikant* recommends that soaps be prepared from saponifiable substances which can readily be obtained by the oxidation of mineral oils, for instance, by oxidizing the crude distillate of a certain fraction of coal oil with sulphuric acid and manganese peroxide by which 50 percent of saponifiable substances are obtained.

For making a soap without fat, Schneider, *Pharm. Zentralh.*, 1916, p. 130, gives the following process: 100 Gm. of soap bark are heated with 300 Gm. of water on a water-bath for a half hour and the liquid is then decanted. To this liquid 400 Gm. of kaolin and 400 Gm. of talcum powder are added and 10 drops of benzaldehyde. The stiff paste thus obtained may be used as a substitute for soap. Naturally, it does not foam but cleanses just as well as soap.

SENNA LEAVES.

Caesar and Loretz, *Geschäftsbericht*, 1915, recommend substituting senna leaves either by rhubarb or still better by buckthorn bark.

FAKE SUBSTITUTES.

Naturally, quite a number of fake preparations are put on the market. Gerber, *Pharm. Zeitung*, 1916, p. 151, published in the *Zeitsch. f. Unt. Nahr. und Genuss.*, 41 analyses about substitutes for food products. These consisted of vegetable and milk albumin, casein, disintegrating substances such as sodium bicarbonate and magnesium carbonate and artificial coloring matter.

TOELLNER'S SUBSTITUTE FOR EGGS.

Pharm. Zeitung, 1916, p. 108; this preparation occurs as a yellow powder which is colored with an artificial dyestuff. It consists of potato starch and powdered skim milk, casein and small quantities of boric acid.

SUBSTITUTE FOR SALAD OIL.

As substitutes for salad oil, vegetable mucilage colored slightly yellow and flavored with soup herbs and preserved with boric acid is offered, but is not allowed by the Government officials to be marketed (*Pharm. Zeitung*, 1916. p, 108).

QUID PRO QUO IN U. S. P. IX.*

BY OTTO RAUBENHEIMER.

Quid pro quo, frequently written in one word *quidproquo*, means in German *Das fuer was*, or in good English, "one for another," and in pharmacy it refers to the substitution or replacement of one drug for another. As pointed out in my paper, "History of Substitutes and of Substitution," regular lists of such *Quid pro quo*, were added to the old works on pharmacy and medicine.

* See foot-note under "History of Substitutes and Substitution," this issue.

That our U. S. P. IX, official from September 1, 1916, contains instances of such *Quid pro quo* and sanctions their employment, is an innovation in pharmacopoeia making of the 20th century, and it is the object of this paper to elucidate these points.

Alum, U. S. P. IX, can be either ammonium alum (which is stated first) or potassium alum, a proper statement to be given on label.

Methyl Salicylate can be either the synthetic preparation or the distillate from wintergreen or from sweet birch. The label must indicate the source.

Scopolamine Hydrobromide is also known as hyoscine hydrobromide.

Oleum Anisi can be either from anise seed or from star anise. The botanical source from which it is derived must be stated on label.

Oleum Sinapis Volatile can be the synthetic preparation or the volatile oil of black mustard, the label to indicate the source.

Petrolatum Liquidum can be heavy or light and can be American or Russian.

Caffeine can be obtained from tea leaves, coffee beans, other plants, or can be prepared synthetically.

Theophylline from tea or synthetically.

Hydrastine from hydrastis or synthetically.

Codeine from opium or by methylation of morphine.

Saccharum from sugar cane, sugar beets or other sources.

The vegetable materia medica of the U. S. P. IX abounds in *Quid pro quo*. In numerable instances the pharmacopoeial drug can be derived from "some other species," as, for example, Cinchona and Rheum. Many drugs can be either one of several species, which species are fully described in U. S. P. IX, for instance:

Benzoin	Siam or Sumatra
Buchu	short or long
Glycyrrhiza	Spanish or Russian
Senna	Alexandria or India
Serpentaria	Virginia or Texas
Xanthoxylon	Northern or Southern
Sarsaparilla	Mexican, Honduras or Jamaica
Ginger	Jamaica, African, Calcutta, Calicut, Cochin or Japanese

The *Quid pro quo* have also taken possession of some galenical preparations, a matter of great importance to the pharmacists.

Upon a careful perusal of the U. S. P. IX I also find the following Notes added to the monographs: *Liquor Cresolis Compositus.*—Note: In this process the 80 Gm. of potassium hydroxide may be replaced by 54 Gm. of sodium hydroxide.

Liquor Magnesii Citratis.—Note: In this process the 2.5 Gm. of potassium bicarbonate may be replaced by 2.1 Gm. of sodium bicarbonate, preferably in tablet form.

Pilulae Ferri Carbonatis.—Note: In this process the 8 Gm. of potassium carbonate may be replaced by 7.2 Gm. of monohydrated sodium carbonate.

These are the principal *Quid pro quo* in the U. S. P. IX. Now the answer as to why was such substitution authorized? For the very same reason as in the times of old Egypt, Greece, Rome and Europe, namely, because certain drugs and medicines became scarce and very expensive and even unobtainable. Blame it all on the war, is the slogan at present! Justly so, because Europe, and quite especially

Germany, has been supplying the United States with drugs and chemicals, and this supply has now been cut off. The Stassfurt mines in Germany no longer furnish the crude material to American manufacturers of potassium salts. The consequent scarcity and extremely high price of the latter were the reason that the Revision Committee authorized the *alternative use of an equivalent amount* of sodium salts by the addition of a Note to the Formula of the following:

Liq. Magnes. Citrat.....	2.1 Gm. $NaHCO_3$	to replace 2.5 Gm. $KHCO_3$
Pil. Ferri Carbon.....	7.2 Gm. $Na_2CO_3H_2O$	to replace 8 Gm. K_2CO_3
Liquor Cresolis Co.....	54 Gm. NaOH	to replace 80 Gm. KOH

Although the action of the Revision Committee has been criticized as "hysterical" and "approving substitution," the writer is firmly convinced that it was a timely step in the right direction and of material benefit to the entire drug trade. In a paper "Sodium Bicarbonate for Citrate of Magnesia," published in *The Practical Druggist*, June 1916, p. 22, I have gone into full details regarding that particular subject.

DEPARTMENT OF PHARMACY,
COLLEGE OF JERSEY CITY, N. J.

ROCKEFELLER FOUNDATION BUILDING PROJECT IN PEKING.

JOHN R. ARNOLD, IN CHARGE, OFFICE OF COMMERCIAL ATTACHÉ, PEKING, CHINA.

An announcement has just been made by the representative of the Rockefeller Foundation in this city with regard to an extensive building program that institution has in prospect. Some time ago the foundation took over the previously established Union Medical College of Peking and the hospital operated in connection with it. It is now proposed to build a complete new plant for these institutions, the plans calling for buildings for the college to accommodate a maximum of 50 students and for the hospital to provide for a present maximum of 200 beds, with possibilities of later expansion. The hospital is intended primarily to provide clinical facilities for the college, and it is expected to be patronized mainly by the poorer classes.

The expenditure that this project will involve is not officially stated, but it is understood that it may run over $1,000,000. The announcement is not only of interest in connection with the great benefit that will accrue to the cause of medical education in China, and with the increase that will result in American prestige in this part of the country, but from a more strictly commercial point of view because of the expenditure that will ultimately be necessary for materials and supplies.

So far the place has only been looked over by an architect. The appointment of regular architects will follow shortly.

SYSTEM AND VIGILANCE THE GREAT ESSENTIALS IN BUSINESS.*

BY LOUIS SCHULZE.

ORDNUNG LERNE, LIEBE SIE,
SIE ERSPART DIR ZEIT UND MÜHE.

This German proverb does not mean that the writer is pro German, or pro anything else in the great conflict "across the pond," but does mean that a good faithful mother from among the numerous proverbs of her ancestors tried to impress her sons, of whom the writer was one, with the great good derived from systematic, orderly arrangement of affairs, and that by the observation of such rules time and labor are saved.

Only a few months ago the great importance of system and vigilance was again impressed upon the writer, by the lack thereof displayed in a pharmacy placed in his hands for disposal. The store in question had been conducted for a year or more for a practicing physician by the young doctor of pharmacy before he became the owner, and during that time was developing into a good stand; thereafter, instead of being the manager, our young P.D. became the owner with the responsibility of doing the buying as well as the selling. In spite of additional funds advanced from time to time from the holder of a bill of sale, the end came after the lapse of about two and half years, and why? First, because of the extravagant ideas of the owner, as although there were good serviceable fixtures in the store that would have answered every purpose, at least until the indebtedness had been largely, if not entirely liquidated, they were added to, remodeled, repolished and the store put into a condition that would have been a credit to New York's Broadway, instead of a small hamlet in the suburbs of Baltimore. When the store was turned over to the writer he remarked to the one who had been the owner, all that was necessary in the evening was a band of music and perhaps a female dancer to make one imagine they were in a New York cabaret. Among other decorations of the store there had been installed the latest and most improved patterns of tables and chairs for the patrons of the soda fountain; artificial palms and grape vines, with clusters of grapes, and next came a typewriter and an expensive desk for it, in the rear of the prescription counter.

Having put in these improvements, our young "Rockefeller" in pharmacy came to the conclusion that the next thing was to buy goods cheap, hence he started in to take advantage of all quantity offers and cornered all non-secret remedies by obtaining the agency by the purchase of quantity lots to prevent anyone else from getting them, although the market store was only $1^1/_2$ miles from him. Goods were sold at the lowest cut prices prevailing in the business center of the city, four miles distant from the store in question. Business was done, the store was well patronized by the community, but somehow, inexplicable to the owner, bills could not be met, so more money was borrowed, and as somehow the system of book-keeping, or lack of system in keeping books, did not show satisfactory profits or gains, the advice of a salesman was taken, and the old cash register was replaced

* Read before Section on Commercial Interests, A. Ph. A., Atlantic City meeting, 1916.

by the latest pattern, three-drawer register that was going to make everything so satisfactory that an automobile, steam yacht, etc., would soon have been purchased for the delivery of goods. But alas for the golden dreams of youth, instead of these came the landlord's distraint for rent, followed by the foreclosure of the bill of sale in the stock and fixtures and the declaration of bankruptcy for our young P.D.

The results would have been different in this case, and the same holds good in any case where there is trade to be had, if a system of book-keeping had been adopted that would have shown clearly the profits being made. These profits should have been arranged to meet the daily outlay, and a sinking fund provided also, so that the indebtedness would be cut down and not increased, then proper help employed and no dependence placed in hangers-on aroung the store for sale of cigars and soda water (as was the case here), as such help is always expensive, for the amount of cigars and cigarettes smoked, the ice cream carried off, etc., in a week amounts to more than the salary of a reliable youth regularly employed for such sales.

Another thing that was overlooked in the case cited and is so often misjudged by young beginners, is that while it is profitable to have a tidy, attractive store, this can be done without very expensive store furniture, and location must always be taken into consideration, as well as the people that constitute the trade. What might be very modest furniture for Broadway would perhaps be very expensive for a small suburban town, and, on the other hand, what might be especially attractive in a suburb composed of the office force and salesmen of manufacturing plants, would be very modest in a suburb whose population is of the millionaire class. But no matter where a store is located, the same vigilant care must be observed to keep expenses within reasonable bounds: not to be too extravagant in the matter of decoration and other methods of advertising; care exercised in purchasing merchandise and not to be too zealous in the cutting of prices. The employment of proper help is as essential as keeping a system of books, that will enable one to know what profits are being made; the store should always be attractive, the windows clean and a neat display therein.

Finally, it may be repeated that courtesy, in the treatment of customers, is a drawing card, thereby they are made permanent patrons, and upon this hinges largely the success of every business, especially that of the smaller towns.

PHOTOGRAPHIC WORK AND SUPPLIES AS A SIDE-LINE.*

BY EMIL ROLLER.

It is a deplorable fact that it is impossible for the average pharmacist in this country to conduct his business as they do in European countries, on a purely scientific basis.

Certainly, the progress made in pharmaceutical education within the last twenty-five years fully entitles the pharmacist to do so, but if tried in practice 99 percent of the attempts would end in failure; therefore we have found it essential to our very existence to branch off from our regularly appointed duties to meet the rapid competition which springs up hydra-headed on all sides of us; we must blind ourselves oftentimes to the ethical aspect of our profession and join that vast class known as the American tradesmen. I say it is deplorable, but I am equally aware of the dire necessity of our actions. But let us be as jealous of our scientific attainments as we can, and let us exercise our scientific knowledge in as many dignified ways as possible. There are many side-lines which we can profitably handle, and still make use of our knowledge of chemistry. Let us take, for instance, the science and art of photography. There is hardly a home to-day where there is not some form of a camera.

In the early days of the amateur, he was compelled to finish his picture from beginning to end, as he could not have the developing and printing done as easily as he can to-day. He had to come to the druggist to make up for him the different solutions or baths, such as developers, fixing baths, gold toning baths, intensifiers, reducers, and so on. The sale of the chemicals for these solutions, or the putting up of them, was a great source of income for the druggist, and having a clientele for these preparations, it soon became a necessity to also keep the plates, films and papers on hand to supply the demand. The profit in these goods varied from 40 to 100 percent in those days; however, this situation has changed within the past eight or nine years. At first, regular photographic galleries started to develop plates and films and printed pictures for amateurs; their charges were rather high and the druggist, who traded in photographic supplies, did not suffer much from this opposition, but soon some shops came into existence that made a regular business of developing and printing for the amateur at prices as low as 5 cents for the print. This, of course, was very enticing for the people and they soon gave up the laborious work of doing their own developing and printing. To-day the amateur who finishes his own pictures is a rarity, and competition in this field has also spoiled the prices we first received. Now most of these professional printing concerns charge nothing for the developing of the films and from 3 to 5 cents for the prints, according to sizes; they allow the druggist a profit of 30 to 40 percent for turning the work over to them. It has, however, stopped our sales of photographic chemicals and solutions and consequently the many other little essentials needed by the amateur photographer; all that is left to us now is the sale of films, cameras and the commissions from printing agencies, but to offset

* Read before Section on Commercial Interests, A. Ph. A., Atlantic City meeting, 1916.

this loss it brings certain people into the store, who otherwise would never have entered.

One thing is very necessary to make this line a success and that is, when you handle photographic supplies, make yourself acquainted with the different photographic processes, so that you can answer all kinds of questions when people tell you about their failures, so you can show them how to avoid these in the future. This will give you a standing as a quasi expert, and once having gained the confidence of the amateur you can always have his business.

It is more than worth while to cater to this kind of trade, as the number of amateurs increases constantly, and in many cases it is a paying business from the outset. Having had twenty-five years' experience in the photographic work, always with success, I am sure you, too, if you give this side-line a trial, will find it not only interesting to yourself, but also very profitable. Try it, I ask you who have not done this work, for it will pay you.

MOSES A WISE DOCTOR.

There has been gathered a collection of facts to prove that the sanitary laws of Moses were not only on a line with the modern rules of hygiene, but in some cases in advance of them.

The Jew, thousands of years before Christ, settling in a semi-tropical country, was forbidden to eat pork or shellfish, and milk was designated as a source of contagion. In the Talmud a method of slaughtering animals was prescribed which is acknowledged to-day in our markets as the most sanitary.

Five thousand years before Koch gave to the world the results of his researches in bacteriology, the Mosaic law pointed out the danger to man from tuberculosis in cattle, but did not forbid infected poultry as food. It was only a few years ago that German specialists discovered that fowl tuberculosis was harmless to man.

The Mosaic law also enforced the isolation of patients with contagious diseases and the burial of the dead outside all cities. These hints the Gentile world did not fully accept until a century or two ago.

The wise law giver prescribed not only fasting at certain periods of the year, but the removal of whole families in summer out to camps, where for a time they could live close to Nature. Many of the laws of Moses were prescriptions intended for the health of both mind and body.—*London Tit Bits.*

CONTRIBUTED AND SELECTED

THE U. S. P., NINTH REVISION, AS A WORKING UNIT FOR THE DRUG CHEMIST.*

BY H. C. FULLER.[1]

I have been asked to discuss the ninth revision of the United States Pharmacopoeia from the standpoint of a chemist. I presume that in presenting my observations I may be permitted to give expressions to the thoughts which come to one who has been associated with the chemical features of drug problems in a broad sense including analytical, standardizational and forensic. I feel that I am pretty well acquainted with the Pharmacopoeia as a working unit after over fifteen years of almost daily contact with the seventh and eighth editions, and from the study I have already made of the ninth and latest edition of the work. My association with the Pharmacopoeia is not a literary or a second-hand, critical, chemical study, but an intimately practical one in everyday work, and during the last nine years I have been able to see at first hand its applicability in relation to chemico-legal problems.

I know nothing of pharmacopoeia politics and am not, and never have been, concerned with anything but the finished work and what it embraces. Hence I can look at it from that standpoint. As a result of my experience the test of the Pharmacopoeia is an intensely practical one. It is the signal test of usage. This test lies entirely in its working value—as it elucidates the definite problem of the moment, either analytical or descriptive. In proportion as it is thus applicable and serves to indicate or clarify the immediate method of procedure or the description of the substance under investigation, in such measure is it a significant factor in my work, and I think I can state with authority, in such measure is it of real and lasting value to the pharmaceutical and medicinal chemist.

The Pharmacopoeia is the authority to which one turns both for standards and for methods of analysis. It is the working unit for the drug and medicinal chemist. Now what is the scope of the ninth revision from the point of view of the drug and medicinal chemist? Let us consider first its scope as to the substances recognized in the text and second as to the standards, analytical tests, and methods of analysis.

The Food and Drugs Act states "that the term 'drug' * * * shall include all medicines and preparations recognized in the United States Pharmacopoeia or National Formulary for internal or external use and any substance or mixture of substances intended to be used for the cure, mitigation or prevention of disease of either man or other animals." Now the first thing that strikes the critical eye of the chemist in looking over the 782 articles recognized in the text of the new edition of the Pharmacopoeia is the fact that about 10 percent of these articles do not answer the definition of drug as given above but are more strictly speaking

* Address delivered before the Washington Branch of the American Pharmaceutical Association.

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chemical reagents, intermediates, condiments, flavoring agents, perfumes, mechanical solvents, vehicles and binders. Thus we have well-defined standards for sulphuric, hydrochloric and nitric acids, aqua regia, sodium indigotinsulphonate, zinc metal, cochineal and red saunders; for lead oxide, bleaching powder and silver oxide; for sugar, caraway, coriander, fennel and mustard seeds, cinnamon, vanillin and nutmeg; for orange flower water, rose water, lemon peel, red rose petals, tincture of lavender and oils of orange, caraway, coriander, fennel, lavender, lemon, spearmint and rosemary; for benzine (petroleum ether), water, acetone and paraldehyde; for starch, gelatin, glucose, honey, paraffin, suet, talc and infusorial earth. Others might be mentioned. The drug chemist asks himself if any one of these substances comes within the scope of the definition of drug as given in the law. It is doubtful if any of the above substances have any extended use as internal or external mitigants or preventatives of disease. Objection will at once be raised to my attitude because of the fact that some of the chemicals mentioned above are employed in the preparation of other chemicals used in medicine, but the manufacture of chemicals is a commercial proposition, and the maker of ammonium chloride, for instance, is not concerned with the employment of a strictly U. S. P. standardized hydrochloric acid. Furthermore, one of the general principles laid down by the committee of revision was to the effect that the standards of purity and strength prescribed in the text of the Pharmacopoeia are intended solely to apply to substances which are used for medicinal purposes. Standards for condiments and flavoring oils have been adopted by the authorities administering the food sections of our National and State Acts, hence the user of these commodities is now amply protected from any sub-standard or spurious articles.

Now please do not misunderstand my position with regard to the inclusion of a considerable number of reagents, intermediates, condiments and flavors in the text of the Pharmacopoeia. I am not objecting to their being included but the significance of including all these substances which are not drugs and medicines is somewhat obscure when a much greater number of important and valuable drugs have not been recognized or have been deleted. If substances such as sulphuric acid, nitric acid, bleaching powder and metallic zinc are included, why omit aniline and benzol which are the basic substances of a vast number of medicinal chemicals as well as iron oxide which is used in the coating of dark-colored tablets?

Again, since there have been included so many reagents, intermediates, condiments and mechanical agents, why was such a large number of botanical drugs of well-established therapeutic value omitted or deleted? For one who uses the Pharmacopoeia as a working unit this is a question of important and serious moment. Let us examine the list of deletions of this class of drugs. Among them are included:

Anthemis	Chirata	Cypripedium
Apocynum	Coca	Euonymus
Berberis	Conium	Eupatorium
Calamus	Convallaria	Ficus
Calendula	Corn silk	Geranium
Cassia fistula	Cotton root bark	Hamamelis leaves and root
Chimaphila	Cusso	Hedeoma

Horehound	Phytolacca	Santonica
Krameria	Prunum	Sassafras pith
Lappa	Quercus	Savine
Leptandra	Quillaja	Scoparius
Lupulin	*Rhus glabra*	Scutellaria
Matico	Rubus	*Viburnum opulus*
Pareira	Salvia	

What percent of the total deletions do these products and their preparations represent? Thirty-five percent.

These botanical drugs have been used as medicinal agents for a great many years. Their value has been demonstrated over and over again by medical usage. The fact that they and the popular remedies containing some of them have withstood the test of years, and, in spite of the derogatory campaigns directed against them, have continued to grow in popular esteem, is in my mind a significant point in their favor. Nature in her omnipotence has supplied mankind with everything he needs for his comfort and advancement; development only has been needed to make it available. Why should we doubt that nature would fail to supply man with the agents for combating the diseases to which he is subject? The development of drug chemistry during the past decade has demonstrated that the botanical drugs, which have been used more or less empirically for many generations, possess new and hitherto unexpected chemical individuals and the discoveries in the field of phytochemistry are destined to assume greater and greater importance. In the case of our natural drugs it has been demonstrated over and over again that no one ingredient is the cause of the therapeutic activity of the individual conglomerate. The classical work of Dr. F. P. Power and his associates has increased our knowledge of the chemical composition of many well-known botanical drugs. The work of unraveling the constituents of our North American drugs has hardly begun, and as Dr. Power recently stated at a meeting of our chemical society, this field is one of the most attractive to the organic chemist at the present time.

It would appear that one of the principles in the compilation of the present Pharmacopoeia was to base its scope on the therapeutic ideas of a limited number of individuals rather than on medical usage, and this brings me up to a very important subject to which I want to refer at this point—namely, the constitutionality of the clause in the Food and Drugs Act making the Pharmacopoeia a standard for drugs. The argument has been advanced that this part of the law is unconstitutional because by it, Congress improperly delegated legislative authority. The decision of Hough on this point in the Lehn and Fink case is based on common sense and is comprehensive for the case in hand. Unfortunately his decision was not passed upon by the Circuit Court of Appeals or the Supreme Court. He quotes: "The legislature cannot delegate this power to make a law but it can make a law to delegate a power to determine some fact or state of things upon which the law makes or intends to make its own opinion depend. To deny this would be to stop the wheels of government. There are many things upon which wise and useful legislation must depend which cannot be known to the law-making power and must therefore be subject to inquiry and determination outside of the halls of legislation;" and on the point at issue he concludes that "to me there

could not be a plainer instance than this act of the legislature's having made a complete and perfect criminal statute, not dependent at the time of its passage on the act of any other power or person and of them providing for changes in the meaning of the word 'adulterated' a word which, in the nature of things, may and should change its signification with advancing knowledge or increasing civilization." It seems to me that, in the light of Judge Hough's decision, a dangerous situation has arisen because the wholesale deletions in the new edition must have been brought about for reasons other than medical usage or chemical discovery. We all know the attitude of the courts towards controversies where the merits of the case depend upon therapeutic opinions, and if it should happen that the question of the constitutionality of that clause in the law making the Pharmacopoeia a standard for drugs, should arise in the course of carefully planned litigation where the parties had made themselves thoroughly familiar with the methods of revision, it is to be feared that the courts would not hold in especial favor a standard which might, at one whim or another, every ten years, delete a hundred or more valuable therapeutic agents and carefully provide for the standards of a number of chemical reagents, foods and condiments under the caption of drugs.

I realize that the answer to this will be that the National Formulary adopts what the Pharmacopoeia deletes, but this is hardly fair to the National Formulary, and furthermore, the legality of this work has not been passed upon by the courts. From my study of the new edition I think that the National Formulary is a more tolerant standard than the Pharmacopoeia. It includes 789 articles in the text, 7 more than are recognized in the text of the Pharmacopoeia. It presents in Part I a set of excellent formulas of galenical preparations and in Part II it provides standards for a large number of chemical salts and botanical drugs, all of which might just as well be recognized by the ninth revision of the Pharmacopoeia as the salts and drugs which are recognized. To one like myself who depends upon the Pharmacopoeia as a working basis, it seems a little incongruous to have two books of standards of drugs and medicinal chemicals. As the situation now exists, neither is a complete book of standards. I think that instead of deleting well-established medicinal agents, the Pharmacopoeia ought to recognize more and more drugs and medicinal chemicals, and in this respect the Homeopathic Pharmacopoeia has much to commend it.

The examination of the text indicates to the chemist that there has been lack of coördination in the relations between some of the substances admitted and deleted in the ninth revision. Attention is called to the fact that pimento is not recognized though several other well-known condiments are included and the oil of pimento is included; santonica, which is often used in veterinary remedies, is not present but santonin is recognized; distilled extract of witch hazel is an official preparation but witch hazel leaves have been discarded; coca has been deleted and cocaine left in; hops find a place but lupulin is missing; honey is given a place at the official table while invert sugar remains unrecognized; zinc metal is featured but bismuth metal, the purity of which for preparation of medicinal chemicals is as fully important as that of zinc, has not been recognized.

From the standpoint of the analytical chemist, the ninth revision contains much material worthy of commendation. The descriptions and the distinctive and purity tests are good, and in general they are sufficient. The relegation to

the mythical past of some of the old pharmaceutical prejudices is gratifying. Thus we see that Digitalis, to be official, is not limited to the two-year old leaf, and that *Cannabis sativa* can grow somewhere else besides the "East Indies." As a matter of fact, by far the larger quantity of the imported article has, in recent years, come from Greece. The compilers might well have gone one step farther and removed the sex limitations of this drug, for I can state with authority that the tops of the male plants possess physiological properties of the same character and to the same degree as those possessed by the pistillate tops. Methyl salicylate is no longer recognized under three headings, the chemically identical oils of Betula and Gaultheria being omitted. This is real progress.

The microscopic and macroscopic tests and characteristics of botanical drugs have been carefully revised and leave little to be desired. I think, however, for consistency, the microscopic characteristics of buchu should have been included.

The chapter on general methods of analysis should be digested by everyone concerned with the testing of drugs and medicines. Especially is this true of the paragraphs relating to the proximate assaying of drugs. The value of the practical advice contained therein cannot be overestimated. Personally, I think the directions in the text for conducting the proximate assays are too loosely worded. They place too much responsibility on the worker, who unfortunately is often too inexperienced to assume the responsibility. I have conducted a great deal of coöperative work on methods of assaying, and I have found that, unless the directions are precise and complete in every detail, comparative results on which reliance can be placed are almost unobtainable. The personal equation of the drug analyst, even of wide reputation, is, to quote Kipling "beyond the wit of any man, black or white, to fathom." In respect to detail, I think the directions for proximate assays in the eighth revision were more likely to lead to accurate results than those in the ninth. However, I will say this. If the analyst knows something about drug assaying and digests the paragraphs on this subject in the general methods, he ought to obtain concordant and fairly accurate results. But even then, if the results are concordant, they do not necessarily furnish data on the true alkaloidal value of the sample.

The ninth revision has adopted the aliquot assay in place of the total extraction method of the eighth revision. This shortens the time of the analysis and eliminates some of the manipulative features of the old assay, but my experience has shown that an aliquot assay does not give as true an idea of the alkaloidal value of a drug as is given by the total extraction procedure. The weak points of the assay processes of the ninth revision will be the cause of much confusion in the drug trade. In fact this condition has already developed. A dealer offers for sale a drug, the strength of which has been based on an assay which shows the true alkaloidal value. The buyer accepts the goods on that basis and then proceeds to check up the assay with the ninth revision method which gives him lower results. Then he files a claim against the seller. Thus a situation arises which is unfair to the drug dealer, but which can be settled only by some adjustment on his part, unless the two factors are willing to have a joint assay performed in the presence of a referee.

Standards for some of the drugs, based on physiological assay, have been described. This feature is a new one and is to be commended. The standard

for Cannabis is too high and the proper labeling of specimens in order to conform to the Food and Drugs Act will cause some hardship to the legitimate drug trade, because the buyer of drugs is disposed to deprecate any lot that the seller cannot guarantee as strictly U. S. P., even though the former knows that the use of a little more drug will yield an extract of full strength. Buyers are quick to take advantage of any situation like this and on the strength of some insignificant technicality will hold the Pharmacopoeia and the Food and Drugs Act as a club to the detriment of the honest drug dealer. Compilers of standards should never lose sight of the economic bearing of their work when they are developing the scientific features.

The introduction of complex methods for assaying essential oils of a purely flavoring nature is of doubtful expediency. These methods are of value to the buyer of oils in case he wants to know the quality of the commodity, but this subject comes more within the scope of food standards and methods for ascertaining them. However, as long as these flavoring agents are recognized as drugs, it is well to have good assay methods for determining their purity.

Comment will be made on a few individual descriptions and tests. The standard for oil of peppermint is altogether too limited in its scope. Oils of excellent flavoring quality distilled directly from the plant, often contain much less menthol than the ninth revision prescribes. The menthol in these oils is replaced by menthone which has no other effect in the oil than to take the place of the menthol, and in no way detracts from the real flavoring qualities due to the menthol esters which are still present. The chemical tests for cod-liver oil are really characteristic of the oil from the fresh livers of fish in general. The ninth revision limits the source of oil of theobroma to the seeds, but the shells of the cocoa bean contain an oil with practically the same composition, which can be used for the same purposes. Tons of this oil are annually wasted. No assay has been included for Sanguinaria. The reason for this is not apparent to one who has been familiar with methods for assaying this drug for many years. The assay of spirit of camphor is limited to natural camphor. A perfectly good spirit can be prepared with artificial camphor, but the use of the assay in the ninth revision would be of no value in determining its strength. The assay of spirit of nitroglycerin is open to criticism. The conclusions from the results obtained would depend largely upon the personal equation of the analyst, and if the commercial alcohol used in the preparation of the material contained any inert soluble substance in excess of that prescribed for pure alcohol of the text, the results would be erroneous. There are several good methods for determining accurately the percentage of nitroglycerin.

Before closing this review of the ninth revision, I want to include a few remarks concerning some of the drugs which are widely used but which have not been recognized. My acquaintance with drugs and chemicals has brought me in contact with a number of individual medicinal commodities for which I am often in need of standards, tests and descriptions, and which are not recognized. Some of these include:

Pinus strobus	*Chamaelirium luteum*	*Asclepias tuberosa*
Iris versicolor	*Chelone glabra*	*Asarum canadense*
Acorus calamus	*Aralia racemosa*	*Baptisia tinctoria*
Aletris farinosa	*Panax quinquefolium*	Paracotoin

Brauneria angustifolia	*Rumex crispus*	Chinosal
Castanea dentata	*Scrophularia marilandica*	Digitoxin
Cnicus benedictus	Juniper berries	Lecithin
Collinsonia canadensis	Veronal	Novocaine
Coptis trifolia	Ichthyol	Acetyl Salicylic Acid
Dioscorea villosa	Chloretone	Nucleinic Acid
Hydrangea arborescens	Alypin	Coto
Melissa officinalis	Atoxyl compounds	Piperazine compounds

They are all drugs which find a place in the Materia Medica of this country and are of much more therapeutic importance than the flavoring agents, condiments, chemical reagents, etc., for which standards and tests have been carefully provided. I realize that many of the botanical drugs have been recognized and described in the National Formulary for which much commendation is due the National Formulary. I also realize that some of the others are products, the manufacture of which is covered by a patent, but I see no reason why this should prevent the inclusion of a valuable drug among the standards of this country. No chemical can be patented. Its designation under its true chemical name is always free. A method of manufacture can be patented and a fanciful name can be trademarked. But why does this prevent recognition of a drug under its true chemical designation, giving its fanciful name as a synonym if desirable? It may be argued that the manufacturers object. But what is the force of this argument if the drug is well established in our Materia Medica and the control of standards and the traffic in drugs has been recognized by our Congress and the standards for these drugs based on the Pharmacopoeia and the National Formulary. Thus far the compilation of these standards has been delegated to responsible bodies and the results of their work have been vouchsafed by the courts. In this connection I was interested in the report of the Agricultural Appropriation Bill just introduced in Congress, wherein a sum is asked for the purpose of determining standards of drugs not recognized by the Pharmacopoeia.

My work with drugs and medicines brings me in contact with a great many different substances. When I want information concerning them, their description, their standards, how to test them and the methods to use, I want some authority to which to turn. To what extent does the Pharmacopoeia, ninth revision, furnish the data? This is the test of the Pharmacopoeia from the standpoint of the drug and medicinal chemist. The ninth revision as an analytical work and book of standards is going to be a great help as far as it goes, except for the unfortunate circumstance of the introduction of the loosely worded methods of drug assaying. As a standard for drugs it is going to be altogether too limited in its scope. It has devoted too much space to prescribing standards for chemical reagents, food products and substances which are purely mechanical in their application to pharmacy and which do not fall within the definition of drug as laid down in the Food and Drugs Act, and has left out a vast number of very important drugs and chemicals in daily use in medical practice, both in this country and those lands to which our drugs are exported.

THE METRIC SYSTEM IN RELATION TO INDUSTRIAL PREPAREDNESS.*

BY J. W. ENGLAND.

Across the waters of the Great Deep there is now raging one of the most terrible wars in history. No man knows when or how it will end, but one thing is sure and this is that it *will* end and that it will be followed by another war—the war of trade. Vulcan will supercede Mars. And this war—a war of peace—on the part of Europe and other nations, will be a war for life and growth and development, and it will be waged chiefly and directly against this country. It will be the rest of the world against the United States. Unquestionably, the ending of the European War will produce an industrial crisis in this country, but this country has never failed in the past to meet any crisis, and it will not fail in the future.

But it behooves the American people to prepare for the crisis by putting their industrial houses in order. They must prepare themselves not only for the defense of the nation, but also, along scientific, industrial and financial lines to the end that the wonderful natural resources of this country may be conserved and utilized to the best advantage, that manufacturing industries may be encouraged toward better growth and development and that our export trade may be made worthy of this great nation. The United States cannot isolate itself in the future, commercially. It must develop a world-wide commerce.

The American business man who wants to do an export business has a whole lot to learn from his European competitors. He must give the foreign buyer what the latter wants, not what he (the American business man) wants. He must ship as the foreign buyer wants shipments made. He must give longer credits. And he must give a service that completely satisfies.

In all foreign trade, except that of Great Britain, the metric system of weights and measures is used almost exclusively, and if the American wants to do an international trade he must manufacture his goods in metric units, and when he does this, he will see the folly of using two systems of weights and measures, the older and the new; and he will be in favor of making the use of the metric system compulsory in this country, as he will not want to manufacture goods in two different systems, one for export trade and one for home trade.

Now what has retarded the general adoption and use in this country of what is admittedly the simplest and most scientific of all the systems of weights and measures in the world, a system whose value was legally recognized in the U. S. Government Service half a century ago?

It has been probably an inherent dislike on the part of the American people to change the every-day methods of doing things unless this has to be done, and it has been, also, the absurd system of exact equivalents that has been used to express the relative values of the two systems. Furthermore, no account has been taken of the fundamental habit of the American to *write* in units and decimals, and *speak* in units and fractions—a hybrid practice, if you will, but *still* one

* Read before the Metric Conference, New York City, December 29, 1916.

to be reckoned with. The American has not been taught to *think* in metric terms; he has been taught to use only equivalents, and this has been a serious mistake.

The American people have been using a metric system of currency for the past century, and would never consent to use a pound-shilling- and pence-system. When an American *writes* his currency, he uses units and decimals; when he speaks he uses units and fractions. Thus he writes $1.25, $2.50 and $3.75; he does not write, respectively, one dollar and twenty-five hundredths, two dollars and fifty hundredths, and three dollars and seventy-five hundredths; and he *speaks* of $1\frac{1}{4}$ dollars, $2\frac{1}{2}$ dollars and $3\frac{3}{4}$ dollars. He does not say 0.25, 0.50 and 0.75 of a dollar, but 25, 50 and 75 cents, or $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ dollars, respectively.

It seems to me that any attempt to popularize the metric system and bring it into common use must take into account this national characteristic.

Of course, the user of the Metric System should have a reasonably accurate conception of the relative values of the metric units in comparison with the older units to which he has been accustomed, but it is sufficient for all practical purposes, to remember that a *meter* is about 1 *yard* (39.371 inches), a *liter* is about 1 *quart* (2.1135 pints), and a *kilo* is about 2 *pounds* (2.2045 pounds). Then, the American housewife could order her dress goods in meters and fractions of the same, and her household goods in kilos and fractions for solids, and in liters and fractions for liquids, and in a very short time would become as familiar with metric units and fractions as with the American dollar and cents.

The big thing in using the metric system is to use as few terms as possible and to *think* in these terms and fractions or decimally, and then the use of the metric system will become as absurdly simple as the use of the American system of currency.

Colonel George W. Burr, U. S. A., Commandant at the Rock Island Arsenal, has had the following "sermonette" placarded in all the shops there. It is an appeal which is directed to everyone:

I am more powerful than the combined armies of the world.

I have destroyed more men than all the wars of the world.

I am more deadly than bullets, and I have wrecked more homes than the mightiest of siege guns.

I steal, in the United States alone, over $300,000,000 each year.

I spare no one, and I find my victims among the rich and poor alike; the young and the old; the strong and weak; widows and orphans know me.

I loom up to such proportions that I cast my shadow over every field of labor from the turning of the grindstone to the moving of every train.

I am relentless. I am everywhere—in the home, on the street, in the factory, at railroad crossings, and on the sea.

I bring sickness, degradation and death, and yet few seek to avoid me.

I destroy, crush or maim; I give nothing, but take all.

I am your worst enemy.

I AM CARELESSNESS.

SYRUPS AND ELIXIRS OF THE U. S. P. IX AND N. F. IV.*

BY E. FULLERTON COOK, P.D.

U. S. P. SYRUPS AND ELIXIRS.

Aromatic Elixir.—This formula remains unchanged. It is unfortunate that the Purified Talc, which is not a satisfactory filtering medium, was not replaced by Purified Siliceous Earth (Kieselguhr), which has been made official. This latter substance greatly increases the speed of filtration and also clarifies the elixir promptly, requiring only the return of the first portion passing through the filter to insure a brilliantly clear elixir.

Elixir of Glycyrrhiza.—The most important change is in title—from Elixir Adjuvans (Adjuvant Elixir) to Elixir of Glycyrrhiza; 125 mils of the Fluidextract of Glycyrrhiza is used instead of the 120 mils of the U. S. P. VIII. This preparation now replaces the N. F. III Elixir of Glycyrrhiza.

Elixir of the Phosphates of Iron, Quinine, and Strychnine.—The omission of the Elixir of the Phosphates of Iron, Quinine and Strychnine is the most striking fact to record concerning the U. S. P. Elixirs. After much discussion this was omitted, first, because the combination of iron, quinine and strychnine in phosphate form introduces numerous complications in manufacture and is the cause of difficulty in producing a permanent elixir. Second, the N. F. contained a formula for an Elixir of Iron, Quinine and Strychnine, which was easily made and did not change in color nor precipitate. Third, physicians on the Committee contended that the phosphate present in such minute amount did not possess any special therapeutic value. Fourth, it was stated that the reputation for an Elixir of the Phosphates of Iron, Quinine and Strychnine was based upon an Elixir which contained no phosphate, except upon the label, and finally, fifth, because the several formulas of the U. S. P. and N. F. caused confusion, and it was hoped that with the entire omission of the formula from the U. S. P., the N. F. formula would alone survive.

Simple Syrup.—No change except that the percolation process has been placed first, presumably to show preference for that method.

Syrup of Acacia.—The only change in this formula is found in the details of manufacture. After the acacia and sugar have been dissolved, they are subjected to sterilization (100° C. for fifteen minutes), and preserved in small, sterilized bottles.

Syrup of Citric Acid.—No change in formula, but the product is to be preserved in bottles previously rinsed with boiling water and "the syrup must not be dispensed unless free from moulds and fermentation products."

Syrup of Hydriodic Acid.—The method of preparation is not changed but the strength has been increased from 1 percent by weight of hydriodic acid to from 1.3 Gm. to 1.45 Gm. in each 100 mils, equivalent to about 1.13 percent by weight, or 1.25 percent by volume, of hydriodic acid. This change brings the U. S. P.

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* Read before the Philadelphia Branch of the A. Ph. A.

syrup into closer conformity in strength with other largely sold syrups of hydriodic acid.

Syrup of Almond.—This syrup was omitted since it was little used and no longer really represented "Orgeat Syrup," which is made from blanched almonds and has the appearance of an emulsion.

Syrup of Orange.—In this syrup the magnesium carbonate was replaced by purified talc since the alkaline carbonate was found to injure the delicacy of the orange flavor. No other change was made.

Syrup of Calcium Lactophosphate.—A portion of the sugar in the formula was replaced by glycerin. No other change.

Syrup of Ferrous Iodide.—Although many experiments were made upon this syrup, citric acid being especially recommended as a preservative instead of hypophosphorous acid, it was finally decided to retain the formula of the U. S. P. VIII, which had been very satisfactory, with but one modification, that is, the amount of sugar was reduced from 600 Gm. to 575 Gm.

Syrup of the Phosphates of Iron, Quinine and Strychnine.—Easton's syrup was not admitted to the U. S. P. IX, but has been recognized in the N. F. IV, the U. S. P. 1890 process being revived.

Syrup of Hypophosphites.—Here the lemon flavor has been dropped and 50 Gm. of the sugar replaced by 50 mils of glycerin. This will assist in its preservation, as it has been shown that small quantities of glycerin retard mould development in preparations of this kind. It might be desirable to mention here that this syrup may be made advantageously by mixing the hypophosphites with the sugar and percolating the mixture with the glycerin-water mixture. A clear filtered syrup is thus produced with little trouble or danger of contamination from dust and other foreign substances.

Compound Syrup of Hypophosphites.—This syrup has been transferred to the N. F. IV.

Syrup of Ipecac.—The formula for the syrup has not been changed although the formula for the fluidextract of ipecac had been devised especially to make a product which would be miscible with syrup without the further addition of acid. As it now stands, the fluidextract contains about one percent of hydrochloric acid and one percent of acetic acid is added to the syrup in addition. This is a case where two Sub-committees did not or would not harmonize their work.

Syrup of Krameria.—Transferred to the N. F. IV.

Syrup of Lactucarium.—No change in the formula.

Syrup of Tar.—The only striking changes are that the tar is no longer mixed with sand and washed with water before solution in alcohol, and the alternative percolation method is added. Tar of U. S. P. quality should not require water-washing and hence the omission of this detail.

Syrup of Wild Cherry.—The pendulum has again swung back and now the glycerin is to pass through the drug during percolation. It seemed that the U. S. P. VIII method, which placed the glycerin in the receiving bottle, to serve only as a preservative, and percolated the wild cherry with water, did not yield a syrup of sufficient color to satisfy those who liked it to "look strong." Glycerin, however, also takes out the tannin and the syrup made by the new method does not have so pleasant a flavor.

Syrup of Rhubarb and Aromatic Syrup of Rhubarb.—No change.

Syrup of Rose and Syrup of Rubus.—Transferred to the N. F. IV.

Compound Syrup of Sarsaparilla.—Here the oils are dissolved in a small quantity of alcohol and this solution added to the mixed fluidextracts and afterward to sufficient syrup. The U. S. P. VIII mixed the oils and fluidextracts with the water, filtered and dissolved the sugar in the filtrate. The new formula is a decided improvement in speed and simplicity of manufacture.

Syrup of Squill.—No change.

Compound Syrup of Squill.—Here again, as in the Compound Syrup of Sarsaparilla, the fluidextracts and solution of tartar emetic are mixed directly with syrup instead of first preparing an aqueous solution in which to dissolve the sugar as was directed in the U. S. P. VIII.

Syrup of Senega and Syrup of Senna.—No change in formula although the several fluidextracts were reconstructed with the special object of rendering them miscible with syrup.

Syrup of Tolu and Syrup of Ginger.—No changes.

N. F. SYRUPS AND ELIXIRS.

Anything to be said upon the large group of N. F. Elixirs and Syrups, in a paper of this character, must be much curtailed or the length will become prohibitive. Reference therefore will be made only to those preparations where a marked change has been made.

Bromide Elixirs.—This group, including Ammonium Bromide, Calcium Bromide, Lithium Bromide, Potassium Bromide and Sodium Bromide, of the former N. F., were all criticized because of their large alcoholic content, which counteracted the sedative effect of the bromide. The Committee first proposed to correct this by using as the vehicle—elixir a new, low-alcoholic strength elixir, flavored with cardamom and vanillin. This elixir has been made official but the Committee finally decided to retain the old aromatic elixir flavor, which had become well established, but they reduce the alcoholic content by using 20 percent of syrup and 46 percent of water with enough aromatic elixir to make 100 parts. This decision is open to the criticism that the flavor is much reduced and does not well cover the taste of the bromide.

Low-alcoholic Percent Elixirs.—Recognizing that elixirs were often too strongly alcoholic, especially those containing aromatic elixir, the Committee have offered several new vehicle-elixirs of low-alcoholic strength. They are Compound Elixir of Almond (about five percent alcohol), Compound Elixir of Cardamom (about 10 percent alcohol), Aqueous Elixir of Glycyrrhiza (about 5 percent alcohol), and Compound Elixir of Vanillin (about 10 percent alcohol). Pharmacists generally should call the attention of physicians to these new elixirs and send out samples for their inspection.

Red Aromatic Elixir.—A new red vehicle-elixir has been admitted, prepared by digesting 2 Gm. of cudbear in 1000 mils of aromatic elixir. This is the same color as the much used Digestive Elixir which has been omitted from the new edition.

Elixir of Bitter Orange.—This preparation, formerly called Elixir of Curaçao, is now termed "Elixir of Bitter Orange." The flavor has also been materially changed.

Elixir of Glycerophosphates.—Note that this title of the N. F. III has been changed to Elixir of Calcium and Sodium Glycerophosphate. This would seem to be an unnecessary lengthening of the title as it was well known and the U. S. P. Syrup of Hypophosphites provided a precedent for such a title.

Elixir of Cinchona Alkaloids.—To meet a Government criticism of misbranding, this title was changed from Elixir of Cinchona to Elixir of Cinchona Alkaloids. It is unfortunate that the more cumbersome title had to be adopted for it will never be popular among prescribers, especially the compound titles, such as Elixir Cinchonae Alkaloidorum, Ferri, Bismuthi et Strychninae.

Elixir of Formates and Compound Elixir of Formates.—These two new formulas should receive the approval of pharmacists since the carbonates of the several bases are used and converted into formates through the use of formic acid, thus avoiding the stocking of five new salts of formic acid. The new elixirs are excellent preparations, pharmaceutically.

Elixir of Gentian.—A new formula is offered here which is a vast improvement over that of the N. F. III. The treatment with ferric hydroxide to prevent discoloration when mixed with iron preparations is rendered unnecessary through the addition of sodium citrate and, in the Elixir of Gentian and Iron, the use of tincture of ferric citro-chloride. This simplifies the process and also retains the bitterness of the gentian which was much impaired through the former treatment with ferric hydroxide.

Compound Elixir of Glycerophosphates.—This new formula has already proven useful to many pharmacists and is an excellent pharmaceutical product.

Essence of Pepsin should now be recognized under its new title, "Compound Elixir of Pepsin and Rennin." The formula has been slightly altered, oil of myristica being added. This title will place the preparation upon its merits and the unscientific title, "Essence" for this class of preparation will be corrected.

Elixir of Terpin Hydrate.—The new formula for this elixir will be found more satisfactory than that of the N. F. III from which sugar persistently crystallized. Note that the amounts of codeine and of diacetylmorphine hydrochloride or heroin in the compound elixirs have been reduced to conform to the requirements of the Harrison Act.

Elixir of Three Bromides is a new formula with about 15 grains of the combined bromides to the teaspoonful.

Among the syrups attention may be called advantageously to the following:

Syrup of Ammonium Hypophosphite.—This new syrup has a distinctive flavor that should enable it to win its own place, if there is any special merit in the preparation.

Compound Syrup of Figs has been added containing figs, senna and aromatic fluidglycerate of cascara sagrada with the oils of fennel and peppermint.

Syrup of Iodotannin.—This new combination of iodine, which has been used abroad and is official in the French Codex, has been introduced.

Compound Syrup of White Pine.—This formula has been much improved and the morphine is omitted unless prescribed under the new title of Compound Syrup of White Pine with Morphine.

Syrups of Blackberry Fruit and Raspberry Fruit.—These are two new fruit syrups added to N. F. IV.

PHARMACEUTICAL FORMULAS

PROPOSED FOR A. PH. A. RECIPE BOOK.

A complete list of these Proposed Formulas since February, 1912, was published in an Index in the December, 1916, number of the JOURNAL. The Committee will continue its work in monthly instalments in this Department of the JOURNAL. Members of the A. Ph. A. are earnestly requested to send suitable formulas and also criticisms of those published to the Chairman, Otto Raubenheimer, Brooklyn, N. Y.

FLAVORING EXTRACTS.

Contributed by Prof. W. L. Scoville, Detroit:

No. 391.

ALMOND.

Oil of Bitter Almond (free from hydrocyanic acid)	20 mils
Sherry Wine, N. F. IV	980 mils

Mix.

Note: Benzaldehyde may be used in place of the acid-free oil of bitter almond, and any white wine containing 18 to 20 percent of alcohol in place of sherry wine.

No. 392.

CELERY.

Oil of Celery	10 mils
Alcohol	650 mils
Water, a sufficient quantity,	
To make	1000 mils

Mix and filter.

No. 393.

CINNAMON.

Oil of Cinnamon	20 mils
Alcohol	700 mils
Water, a sufficient quantity,	
To make	1000 mils

Mix and filter.

No. 394.

CLOVE.

Oil of Clove	20 mils
Alcohol	600 mils
Water, a sufficient quantity,	
To make	1000 mils

Mix and filter.

No. 395.

GINGER, SOLUBLE.

Ground Ginger	200 Gm.
Diluted Alcohol, a sufficient quantity,	
To make	1000 mils

Make a tincture by percolation in the usual manner. Caution: *Do not label "Tincture of Ginger."*

No. 396.

LEMON.

Oil of Lemon	50 mils
Lemon Peel, outer layer only	50 Gm.
Alcohol, a sufficient quantity,	
To make	1000 mils

Mix, allow to stand 48 hours and filter.

No. 397.

LEMON, SOLUBLE.

Concentrated Oil of Lemon (Terpeneless)	5 mils
Turmeric	5 Gm.
Alcohol	500 mils
Water, a sufficient quantity,	
To make	1000 mils

Mix the oil and alcohol, add the turmeric, allow to stand 24 hours, then add the water, again allow to stand 24 hours, with occasional shaking, then filter.

Note: Not allowed in interstate commerce unless properly labeled.

No. 398.

NUTMEG.

Oil of Nutmeg	20 mils
Alcohol	700 mils
Water, a sufficient quantity,	
To make	1000 mils

Mix and filter.

No. 399.

ONION.

Oil of Garlic	0.5 mil
Tincture of Asafetida	350 mils
Alcohol	200 mils
Purified Talc	25 Gm.
Water, a sufficient quantity,	
To make	1000 mils

Mix the oil, alcohol and tincture and gradually add the water. Then add the talcum, shake occasionally for a few hours, and filter.

No. 400.

ORANGE.

Oil of Orange	50 mils
Orange Peel, outer layer only	50 Gm.
Alcohol, a sufficient quantity,	
To make	1000 mils

Mix, allow to stand 48 hours, with occasional shaking, and filter.

No. 401.

ORANGE, SOLUBLE.

Concentrated Oil of Orange (Terpeneless)	5 mils
Solution of Cochineal	1 mil
Tincture of Caramel, N. F. IV	2 mils
Alcohol	500 mils
Water, a sufficient quantity,	
To make	1000 mils

Mix the oil with the alcohol, add the water gradually and finally the color.

No. 402.

PISTACHIO.

Oil of Neroli	0.4 mil
Extract of Almond	350 mils
Extract of Vanilla	650 mils

Mix.

No. 403.

PISTACHIO.

Concentrated Oil of Orange (Terpeneless)	1 mil
Concentrated Oil of Lemon (Terpeneless)	6 mils
Oil of Nutmeg	6 mils
Oil of Sassafras	4 mils
Oil of Clove	1 mil
Oil of Bitter Almond	4 mils
Extract of Vanilla, a sufficient quantity,	
To make	1000 mils

Mix and filter.

No. 404.

TINCTURA VANILLINI COMPOSITA.
COMPOUND TINCTURE OF VANILLIN.
N. F. III.

Vanillin	6.5 Gm.
Coumarin	0.4 Gm.
Alcohol	200 mils
Glycerin	125 mils
Syrup	125 mils
Compound Tincture Cudbear	16 mils
Water, a sufficient quantity,	
To make	1000 mils

Dissolve the vanillin and coumarin in the alcohol, add the other ingredients and filter.

Many prefer this preparation to Tincture of Vanilla, formerly official in U. S. P., and now in N. F. IV.

No. 405.

VANILLA WITH TONKA.

Vanilla Beans, cut fine	60 Gm.
Tonka Beans, ground	40 Gm.
Diluted Alcohol, a sufficient quantity,	
To make	1000 mils

Make a tincture, by percolation, in the usual manner.

No. 405A.

GINGER.

From Oleoresin.

Oleoresin of Ginger	10 Gm.
Alcohol, a sufficient quantity,	
To make	1000 mils

Dissolve.

Note: This, by no means, is the equivalent of Tincture of Ginger, U. S. P., and should not be sold as such.

No. 406.

FLAVORING POWDERS AND PASTES.

These have sugar as a base, and are made to correspond in strength to the flavoring extracts.

Flavoring Powder of Almond is made by triturating 20 mils of oil of bitter almond with 980 Gm. of powdered sugar.

Ginger, by triturating 10 Gm. of oleoresin of ginger with 990 Gm. of powdered sugar.

Lemon, by mixing 50 mils of natural oil, or 5 mils of concentrated or "terpeneless" oil of lemon with powdered sugar to make 1000 Gm., and tinting the powder yellow with turmeric or saffron.

These powdered flavors are used to avoid the alcohol in the extracts.

If a paste is desired mix in enough glycerin to obtain a paste of the desired consistency—or better, make a paste with a mixture of equal parts of glycerin and syrup.

Powders and pastes are more sensitive to

exposure than liquid extracts and must be kept in tightly closed containers. Pastes are dispensed, preferably, in collapsible tubes, and are sometimes made stronger to facilitate their use.

Contributed by John K. Thum, Philadelphia:

No. 407.

PULVIS ANTISEPTICUS ADSTRINGENS.
German Hospital, Phila.

Sodium Borate	600 Gm.
Alum, dried	400 Gm.
Phenol	5 Gm.
Thymol	5 Gm.
Menthol	5 Gm.
Eucalyptol	5 mils
Methyl Salicylate	5 mils

This powder is used as a douche in the proportion of 5 to 10 Gm. dissolved in a liter of water. It is very popular with physicians, who favor a mildly alkaline and astringent solution for many vaginal conditions.

No. 408.

BALSAM SOLUTION NO. 1.
German Hospital, Phila.

Oil of Pine	2 mils
Oil of Eucalyptus	4 mils
Oil of Cinnamon	1 mil
Menthol	1 Gm.
Comp. Tincture of Benzoin	46 mils
Tincture of Benzoin	46 mils

To be used in vaporizer.

No. 409.

CHLORETONE INHALANT.
German Hospital. Phila.

Chloretone	1 Gm.
Camphor	10 Gm.
Menthol	10 Gm.
Oil of Cinnamon	1 mil
Liquid Petrox	18 mils
Liquid Petrolatum	160 mils

No. 410.

ELIXIR ACETANILIDUM COMPOSITUM.
German Hospital, Phila.

Acetanilid	20 Gm.
Caffeine, alkaloid	2 Gm.
Sodium Bromide	60 Gm.
Aromatic Elixir, a sufficient quantity,	
To make	1000 mils

No. 411.

MISTURA AMMONII CARBONATIS.
German Hospital, Phila.

Ammonium Carbonate	2 Gm.
Morphine Sulphate	0.05 Gm.
Tincture of Lobelia	4 mils
Distilled Water	20 mils
Syrup, a sufficient quantity,	
To make	100 mils

No. 412.

MISTURA ANTIDIARRHOEA.
German Hospital, Phila.

Prepared Chalk	3 Gm.
Tincture of Kino	5 mils
Camphorated Tincture of Opium	3 mils
Comp. Tincture of Cardamom	10 mils
Spirit of Chloroform	5 mils
Peppermint Water	40 mils
Syrup of Orange, a sufficient quantity,	
To make	100 mils

No. 413.

MISTURA ANTIGOUT.
German Hospital, Phila.

Morphine Sulphate	0.10 Gm
Potassium Iodide	5 Gm.
Wine of Colchicum Root	10 mils
Aromatic Elixir	50 mils
Distilled Water, a sufficient quantity,	
To make	100 mils

No. 414.

MISTURA ANTIRHEUMATICA.
German Hospital, Phila.

Potassium Iodide	5 Gm.
Wine of Colchicum Root	15 mils
Comp. Tincture of Cardamom	15 mils
Aromatic Elixir, a sufficient quantity,	
To make	100 mils

No. 415.

MISTURA BISMUTHI ET COCAINAE.
German Hospital, Phila.

Bismuth Subnitrate	10 Gm.
Cocaine Hydrochloride	0.1 Gm.
Syrup of Acacia	40 mils
Peppermint Water, a sufficient quantity,	
To make	100 mils

No. 416.

MISTURA TUSSI.

Children's Hospital Cough Mixture.
German Hospital, Phila.

Aromatic Spirit of Ammonia	2.5 mils
Syrup of Senega	6 mils
Syrup of Ipecac	6 mils
Syrup of Tolu	6 mils
Camphorated Tincture of Opium	1.5 mils
Comp. Tincture of Cardamom	4 mils
Syrup	35 mils
Anise Water, a sufficient quantity,	
To make	100 mils

No. 417.

MISTURA ANTIFEBRIFUGA.

Children's Hospital Fever Mixture.
German Hospital, Phila.

Potassium Citrate	4 Gm.
Spirit of Nitrous Ether	15 mils
Syrup of Lemon	15 mils
Solution of Ammonium Acetate	60 mils
Distilled Water, a sufficient quantity,	
To make	100 mils

No. 418.

MISTURA CODEINAE COMPOSITA.

German Hospital, Phila.

Codeine Sulphate	0.1 Gm.
Diluted Hydrocyanic Acid	2 mils
Syrup of Lemon	50 mils
Distilled Water, a sufficient quantity,	
To make	100 mils

No. 419.

MISTURA DIURETICA.

German Hospital, Phila.

Caffeine, alkaloid	5.5 Gm.
Sodium Salicylate	4.5 Gm.
Distilled Water, a sufficient quantity,	
To make	100 mils

No. 420.

MISTURA GLYCYRRHIZAE COMP. CUM AMMONII CHLORIDO.

German Hospital, Phila.

Ammonium Chloride	5 Gm.
Brown Mixture	100 mils

No. 421.

MISTURA COPAIBAE.

Modified Lafayette Mixture.
German Hospital, Phila.

Copaiba	200 Gm.
Solution of Potassium Hydroxide	75 mils
Spirit of Nitrous Ether	300 mils
Fluidextract of Glycyrrhiza	150 mils
Methyl Salicylate	10 mils
Camphor Water, a sufficient quantity,	
To make	1000 mils

No. 422.

MISTURA HYDRARGYRI ET POTASSII IODIDI.

Dr. Uhle's Formula.
German Hospital, Phila.

Mercuric Iodide	0.06 Gm.
Potassium Iodide	10 Gm.
Comp. Tincture of Gentian, a sufficient quantity,	
To make	100 mils

No. 423.

MISTURA HYDRARGYRI CUM RHEO.

Mixture of Blue Mass and Rhubarb.
German Hospital, Phila.

Powdered Blue Mass	2 Gm.
Aromatic Syrup of Rhubarb	100 mils

No. 424.

MISTURA STAPHISAGRIAE ET SPIRITUS MYRCIAE.

Stavesacre and Bay Rum.
German Hospital, Phila.

Tincture of Staphisagria	100 mils
Bay Rum	100 mils

No. 425.

TINCTURA STAPHISAGRIAE.

Tincture of Stavesacre.
German Hospital, Phila.

Stavesacre, ground	200 Gm.
Alcohol, a sufficient quantity,	
To make	1000 mils

Macerate the ground stavesacre with 150 mils of alcohol for 24 hours, then pack firmly in a cylindrical percolator and continue passing alcohol through the ground drug until one thousand mils of tincture are obtained.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

CHICAGO.

The regular monthly meeting of the Chicago Branch American Pharmaceutical Association was held at the College of Pharmacy building, 701 S. Wood St., Friday, December 15.

The subject of the evening was the A. Ph. A. Recipe Book, and a large number of formulas were presented for discussion, including especially formulas for ointments and photographic materials. Wm. Gray and I. A. Becker, both members of the Committee on A. Ph. A. Recipe Book, took leading parts in the discussion.

During the discussion an objection was raised by Dr. Bernard Fantus to the names of some of the formulas submitted by Mr. Gray because they indicated the use of the preparation, *e. g.*, Goiter Ointment, Keratoplastic Ointment, etc. The late Professor Hallberg had shown how undesirable it was for the name of a preparation to suggest its use. He claimed and justly so, that if suggestive names were eliminated, it would knock the bottom out of the proprietary medicine business. There is another objection to such names,—they are dishonest. The goiter ointment submitted does not cure goiter as the name would suggest. You can vouch for the ingredients of any preparation but you cannot vouch for the therapeutic or curative effect. It would therefore be a good principle to adopt that the Recipe Book should not include titles suggesting medicinal use.

The question of the use of any proprietary mixture in a formula to be included in the Recipe Book also aroused discussion, and it was pretty well agreed that no such mixtures should be named in the book. Formulas might be included, if it was thought advisable, for preparations of known medicinal value and which every pharmacist could and should be able to make for himself.

Professor Day called attention to the action of the Association in providing for the publication in the December JOURNAL of an Index to the formulas so far submitted and which would provide a basis for further constructive efforts.

The discussion brought up the question of scope and the general opinion of the meeting was that the Committee should review the papers and discussions already published relating to the Recipe Book, and formulate and publish in the JOURNAL for discussion a statement of the scope of the book.

The work of the Committee so far published received a very general approval. The division of the work of collection of formulas among the members of the Committee as has been done by Chairman Raubenheimer and the provision made for a practical testing out of the formulas submitted indicate real progress on the part of the Committee. The Committee should guarantee every formula that is finally submitted to the Association for approval to be pharmaceutically correct.

The Chicago Branch desires to express to the Committee its appreciation of the work already done and to offer its coöperation in bringing to an early completion this next great publication of the American Pharmaceutical Association.

E. N. GATHERCOAL, *Secretary.*

INDIANAPOLIS.

At the December meeting of the Indianapolis Branch of the American Pharmaceutical Association, H. S. Noel, of the Advertising Department of Eli Lilly & Company, discussed "Retail Drug Store Advertising."

Mr. Noel outlined the fundamentals of drug store publicity by citing the necessity of a proper foundation upon which to build. The basis of all drug store advertising, the speaker said, is made up of promotion work that is costless but highly essential if proper returns are to be had from the business.

The druggist who secures the best returns from his advertising expenditures, according to Mr. Noel, must first see to it that customers are sold quality merchandise; that the store

is the embodiment of cleanliness; that both himself and his clerks are courteous and accommodating; that salesmanship is well developed; and that stock is kept up and properly displayed.

Poor buying, slow turnover, bad accounting methods, cheap merchandise, and neglect of costless advertising opportunities were given as chief reasons for the lack of success in many drug stores.

The speaker laid special stress on the importance of good window displays and called attention to their value as trade winners. He also spoke of the need of price tickets on goods in the windows and outlined in a general way the proper arrangement and selection of goods best adapted to windows that are intended to act as money magnets.

The value of a name was another subject that received attention, and the speaker was strong in the belief that whenever possible the druggist should feature his own first. The selection of a good selling slogan and how to capitalize on it was also advised.

Constant advertising, said Mr. Noel, is necessary. It has been his observation that many druggists advertise when business is dull and then claim that advertising does not pay them.

Taking advantage of the national advertising that is constantly appearing, and expioiting nationally advertised goods the druggist carries is good publicity to connect with, said the speaker; the dealer helps should be used to the best advantage and made to serve the purpose for which they are intended.

In conclusion, the speaker took up the matter of how much to spend a year in advertising and emphasized the importance of careful planning, the selection of ways and means, and the preparation of copy. Mailing lists, said Mr. Noel, are the most valuable adjunct the neighborhood store has. He told of the best ways of building a mailing list, of the importance of keeping it up-to-date and discussed the commercial value of personal note letters under a two cent stamp, at the same time mentioning various drug store items that could be made especially productive by means of mailing lists.

Following Mr. Noel's paper a discussion was led by E. R. Stucky. Others who took part were H. W. Carter, E. C. Reick, Maurice Schwartz, F. R. Eldred, Edward Merrell and F. H. Carter.

FRANCIS E. BIBBINS, *Secretary.*

NASHVILLE.

The regular meeting of the Nashville Branch of the American Pharmaceutical Association was held in joint session with the Nashville Drug Club in the parlors of the Nashville Business Men's Association, Thursday, December 7, 1916, when Mr. D. J. Kuhn presided. The minutes of the previous meeting were read and approved. The committee appointed to investigate the opening of drug stores by ex-saloon-keepers presented the following resolutions in making their report:

"WHEREAS the opening of new drug stores by unlicensed men for the apparent purpose of engaging in the liquor business and which debauches the profession of pharmacy to the level of the saloon-keeper, and whereas the open sale of liquors in these drug stores continues in open defiance of the law of the State of Tennessee, and whereas the city, county and state officials, whether willingly or not, do not under present conditions seem able to suppress the open violation of these laws, therefore, be it resolved by the Nashville Branch of the American Pharmaceutical Association and the Nashville Drug Club that they endorse and give full support to any additional legislation introduced by Governor Thomas Rye, or by an organization, that will fully suppress the illegal sale of liquor in drug stores, even to the extent of endorsing a law that will absolutely prohibit the sale of alcoholic and intoxicating liquors in drug stores, whether prescribed by a physician or not.

Be it further resolved that our legislative committees be instructed to support such legislation."

(Signed) S. C. DAVIS.
J. B. SAND.

After some discussion the resolutions were unanimously adopted. President D. J. Kuhn reported that a joint meeting of the legislative committees of the Nashville Drug Club, Nashville Branch of the American Pharmaceutical Association and the Tennessee State Pharmaceutical Association was recently held, and a bill aiming to correct these evils had been drawn up and would be presented to the State Legislature next month. Secretary William R. White reported that a motion was before the Council of the American Pharmaceutical Association that a committee be appointed for building headquarters for the Association. The idea was heartily endorsed by the members and the following committee

was appointed to present Nashville's claims as the proper place for the location of the headquarters: Ira B. Clark, S. C. Davis, J. B. Sand and William R. White.

It was announced that honorary president J. O. Burge of the A. Ph. A. was to-day celebrating the 50th anniversary of his entrance into the drug business. He was heartily congratulated.

WILLIAM R. WHITE, *Secretary.*

NEW ENGLAND.

The New England Branch of the American Pharmaceutical Association held its annual meeting for the election of officers on Wednesday evening, November 22, at the Massachusetts College of Pharmacy, Boston.

President F. W. Archer presided, and after business of a routine nature was transacted, officers for the year 1916–17 were elected. J. G. Godding as chairman of a committee on nominations, presented the following names as candidates for the various offices: *President,* R. Albro Newton; *Vice-President,* William H. Glover; *Secretary-Treasurer,* Hugh C. Muldoon; *Chairman of Committee on Professional Relations,* Carlton B. Wheeler; *Chairman of Committee on Membership,* Frank F. Ernst; *Representative on Council,* Elie H. LaPierre. Upon motion, a single ballot was cast for the nominees and they were declared elected.

After the newly elected officers had been installed, the meeting was adjourned and the members went into joint session with the Boston Association of Retail Druggists.

President R. Albro Newton presided at the joint meeting which proved to be of an exceedingly interesting character. The special topics for discussion were the syrups and tinctures of the U. S. P. IX. Papers were read by R. A. Newton and W. R. Acheson in which explanations of new processes were made and changes in the ingredients or strength of the various preparations were considered in detail. Many instructive points were brought out in the spirited discussion led by W. H. Glover and F. F. Ernst, which followed the reading of the papers. Much interest seemed to center about tinctures of cantharides, iodine and nux vomica, syrup of hydriodic acid, and the subject of biological assays.

So much interest was aroused by the discussion that it was decided to hold in the near future an "experience meeting" at which the results of the various members' experiences with other preparations of the U. S. P. IX might be made known.

HUGH C. MULDOON, *Secretary.*

NEW YORK.

The November, 1916, meeting of the New York Branch of the American Pharmaceutical Association was held in the Library of the New York College of Pharmacy on Monday evening, the 13th, at 8.30 o'clock.

There were present twenty-six members, President Lascoff presiding.

The Secretary read the minutes of the previous meeting which were approved.

The Treasurer submitted his report, which showed a balance on hand of $144.70.

Membership Committee.—The following five applications for membership in the parent association were received:

Charles A. Oates, 658 Ninth Avenue, New York, N. Y.

J. A. Valvano, 2059 First Ave., New York, N. Y.

B. C. Steves, 48 West 130th St., New York, N. Y.

Max Lapat, 35 West 32nd St., New York, N. Y.

B. J. Davis, 115 West 68th St., New York, N. Y.

Committee on Legislation and Education.—Dr. Anderson, Chairman, reported for this committee on the test case now pending in connection with the legality of rulings made by the Internal Revenue Department in relation to the Harrison Act. He also submitted reports on prospective anti-narcotic legislation and medical insurance.

Committee on Fraternal Relations.—Dr. Diner reported that a meeting had been held at his residence at which were present Drs. Squires, Dougherty and Bastedo representing the County Medical Society and Drs. Diner, Mayer and Mr. Lehman representing the Branch. Dr. Diner further reported that another meeting would be held in December; that the medical men were most enthusiastic over the proposed joint meeting and among the subjects suggested for papers at the joint meeting were: "Does the Physician Need the Pharmacist?" and "What Steps Shall We Take toward Better Mutual Understanding?" The joint meeting will probably be held in January or February. Upon motion duly seconded and carried, the outlined program was approved.

Progress of Pharmacy.—As usual, Dr. Diekman submitted a very interesting number of abstracts on the following subjects: Analysis of Rhamnus Barks; Hyoscyamus; Iodin-Starch Reaction; Identification of Ol. Tiglii; Acetaldehyde; Colloidal Carbon; etc.

After a lively discussion of Dr. Diekman's report, Mr. C. A. Mayo and Dr. H. V. Arny, in place of the usual paper, discussed the proposed Metric Conference, at which many commercial organizations are to be represented. These include, among others, the wholesale druggists, manufacturers of hardware, the wholesale grocers, engineers, etc. Upon motion of Dr. Diner, which was duly seconded and carried, the following members were appointed as a committee to represent the Branch at the meeting of the American Association for the Advancement of Science to be held in December (26–29): Messrs. Diner, Mayer, Latham, Turner and Hostmann.

Upon motion, it was then voted to adjourn.

JEANNOT HOSTMANN, *Secretary.*

PHILADELPHIA.

The regular monthly meeting of the Philadelphia Branch of the A. Ph. A. was held Tuesday evening, November 15, 1916, at the Temple College of Pharmacy. President Sturmer called the meeting to order at 8.45, and the minutes of the previous meeting were read and approved.

Prof. C. H. LaWall proposed Miss Mabel Starr and Mr. Ivor Griffith for membership, and they were duly elected.

Mr. W. L. Cliffe, as Chairman of the Committee on Entertainment of Visiting Pharmacists, reported that their plans were successfully carried out, and that the small deficit incurred had been liquidated by the Committee. He also moved that votes of thanks be given to Mrs. Franklin M. Apple for her splendid assistance in entertaining the Ladies Section, and to the Philadelphia Chamber of Commerce and its Publicity Bureau for their hearty coöperation in the matter. The motion, on being seconded and put to vote, was unanimously passed.

Prof. Kraemer moved that the Local Branch extend to Mr. Cliffe a vote of thanks for the efficient manner in which he conducted the work of his committee; and this likewise received a unanimous vote.

The following letters from the Philadelphia County Medical Society were read:

PHILADELPHIA, PA., October 20, 1916.

DR. J. ED. BREWER, *Secretary,*
Philadelphia Branch A. Ph. A.,
Bryn Mawr, Pa.

DEAR DOCTOR:

At a business meeting of this Society held October 18th, the following resolution was introduced as follows, and adopted:

RESOLVED: That the Philadelphia Academy of Stomatology and the Philadelphia Branch of the American Pharmaceutical Society be requested to each appoint two delegates to coöperate with this Society and to attend its meetings.

I should therefore be glad to hear from you at your convenience the names of your delegates, should you decide to take favorable action.

Very truly yours,
(Signed) WILLIAM S. WRAY,
Secretary.

NOVEMBER 11, 1916.

DR. JULIUS STURMER,
Philadelphia College of Pharmacy,
Philadelphia, Pa.

MY DEAR SIR:

At the next meeting of the Philadelphia County Medical Society, to be held in the College of Physicians Building, 22nd Street above Chestnut, Wednesday, November 22nd, at 8.30 P.M., the question for discussion will be the Habit Evil. Mr. Francis Fisher Kane will present the legal status and legislation to be obtained at Harrisburg in this regard.

Dr. Dorcum will present a paper on the Drug Habit among the better classes and its treatment, and Dr. Baldi, of Moyamensing Prison, will present a paper on the Drug Habit in the underworld.

We feel that the dentists, druggists and physicians are interested in this subject, and we should be very glad if you can spread the news among the members of the Philadelphia Branch of the American Pharmaceutical Association as we would be pleased to have any of your members who are interested attend this meeting.

Very truly yours,
(Signed) FRANK G. HAMMOND.

Prof. Remington moved that these letters be spread on the minutes of the Branch, and that we accept the invitation for November 22nd, with thanks, and that the President appoint two delegates, as suggested in the letter of October 20th. Also, that the Secretary

be instructed to acquaint our members of these invitations by mail.

Mr. England seconded the motion, and it was passed by vote.

Mr. George M. Beringer read an interesting and comprehensive paper on "The Galenicals of the U. S. P. IX."

Prof. Joseph P. Remington discussed the U. S. P. IX in a general manner.

The papers were interestingly discussed by Messrs, Cliffe, Apple, LaWall, Kraemer, McCartney, Cook, England, Minehart, and Pollard.

As the hour was becoming late, it was decided to postpone the other two scheduled papers until the December meeting, after which the meeting adjourned.

J. Ed. Brewer,
Secretary.

At the last meeting of the Philadelphia Branch A. Ph. A., during a discussion on the question "What Disposition Shall be Made of the Year Book?" the following points were emphasized:

1. The A. Ph. A. gives each member more than his dues will pay for, hence each year there is a deficit. This must be met with an increase of revenue or decrease of expenditures. The former can be brought about only by an increase of dues; the latter, most feasibly either by discontinuing the Year Book, or publishing it in the Journal from time to time.

2. The continuance of the Year Book is absolutely necessary for the progress of American Pharmacy, for it is only by the use of this and allied works that any progress is made. Were it not for this systematized and carefully indexed account of what has been done, information which can now be obtained in a few moments, would be available only after an extended time—and patience—consuming search through many journals.

In accordance with this view, the following resolution was proposed and adopted:

Resolved, That the Philadelphia Branch go on record as favoring the continuance of the Journal and the Year Book, as at present, and that any deficit which might occur be met with an increase in dues; and further, that the Secretary be instructed to send copies of this resolution to the Council and to the secretaries of the various Local Branches.

Very truly yours,

J. Ed. Brewer, *Secretary.*

PITTSBURGH.

Pittsburgh Branch of the American Pharmaceutical Association began its Winter series of meetings at the College of Pharmacy, November 24. The subject for the opening meeting was handled in a masterful manner by Dr. Louis Saalbach, "A Brief Review of the United States Pharmacopoeia."

Dr. Saalbach carefully analyzed the various changes, additions and deletions that characterize the U. S. P. IX, specific mention being made of a number of the changes in title of some preparations, and changes in processes of others. For the first time in the history of a pharmacopoeia, official abbreviations have been added under each title, the object being to promote uniformity, thereby preventing misinterpretation, and also to act as a guide in the labeling of shelf bottles. To avoid possibility of errors, attention is directed to the fact that the abbreviation *sulph* means sulphate; *chlor* means chloride; sulphur, sulphite and sulphide are not abbreviated, and for chlorate the work *chloras* is used.

Over two hundred items found in the previous work have been deleted from the U. S. P. IX, many of which will be found in the National Formulary. Sixty-seven new titles have been added, while about thirty have been dropped. Among the deletions some have been dropped because the Committee could not come to an agreement as to what the standard should be. In the latter class we find whisky, brandy and all wines. All preparations of iron, quinine and strychnine phosphate have been dropped, and these have not been given recognition in the National Formulary, the reason given being that pharmaceutically all such preparations are imperfect and unsatisfactory. Compound spirit of ether, familiarly known as Hoffman's Anodyne, has been deleted. In the formula for infusion of digitalis, the alcohol is omitted while the cinnamon water has been retained. In the preparation of solution of magnesium citrate, sodium bicarbonate may be used instead of potassium bicarbonate. The syrup of wild cherry has had its working formula in which glycerin is mixed with the menstruum restored.

Concerning the criticism that the book is too scientifically accurate for the average pharmacist, Dr. Saalbach said, "Inasmuch as it has been made the legal standard by the U. S.

Government it must, of necessity, be sufficiently accurate to stand results in courts of law. Taken all in all, the U. S. P. IX is a volume of which the revisers, as well as the pharmacists, may well be proud."

Discussing Dr. Saalbach's paper Dr. Koch said it was understood, although not officially announced, that owing to the unavoidable delay in issuing the book the authorities in charge of the pure food and drug laws will enter no prosecution based upon its official requirements until after January 1, 1917. In response to a query Dr. Koch further explained that while the National Formulary is also recognized as authority by the courts, yet it is no part or not connected in any manner with the U. S. P.

Referring to the deletion of liquors from the U. S. P., Dr. Koch mentioned an instance where, in a prohibition state, a druggist had been prosecuted and punished for dispensing whisky on a legitimate prescription, because the court ruled, that as it was not found in the official book as a medicine it cannot be regarded as such. The fact was brought out that as mercurial antiseptic tablets must officially be blue, white tablets of that character cannot be legally dispensed after the authorities begin their inspection work.

B. E. PRITCHARD, *Secretary*.

WHAT IS KARAYA GUM?

During the last ten years a constantly increasing amount of this little-known gum has been imported into this country from India. It is known in the trade as karaya or kadaya gum, and is used extensively as a substitute for tragacanth. For a long time its botanical origin was in doubt, but it is now definitely known that it is the product of *Sterculia urens* Roxb., a tree of the cola nut family of plants. It has an extensive range of growth in northwestern India, Assam, Behar, the east and west Peninsula and in Ceylon. The tree is said to be very common in Konken, in the Bombay Presidency, and that Khandesh supplies the largest quantities of the gum to the Bombay markets.

Sterculia urens is a fine tree, forty feet or upward in height, with five-lobed, hand-shaped leaves, which yield a mucilaginous substance. The seeds, which are enclosed in a dry pod covered with stiff, bristly, stinging hairs, are used as an article of food among the natives of India. The bark is astringent and is used medicinally. The wood is soft and valuable for a great variety of purposes. Aside from the fact that the trunk produces a valuable gum, every part of the tree is useful. The living trees exude large quantities of gum which is variously known as karai, katira, katila, kadaya, karaya, kuteera, kutera, and kutira. According to some authors, it is also called kawali, pandruk, loli, gula, kahu, penari, and velley-putali. A gum similar in all respects to that produced by *Sterculia urens* and often mixed with that obtained from the latter, is produced by two other trees. *Sterculia villosa* and *Cocklospermum gossypium*. This gum belongs to the tragacanth series and in the powdered state is commonly mistaken for true gum tragacanth. In the whole condition it may be described as irregular, rounded, translucent lumps of a pale buff color; it never occurs in ribbon-like bands like true tragacanth. As an article of food or medicine it is distinctly inferior, but it is considerably cheaper and for this reason it has been used rather extensively in place of tragacanth, which is now selling for several dollars a pound; gum karaya in the whole state is now quoted at from 12 to 18 cents per pound, and the powdered gum for 16 to 24 cents. In India karaya gum is used extensively as a substitute for tragacanth, for making sweetmeats and also locally in the treatment of throat affections. In this country it is employed as an emulsifying agent, for which it is equal to tragacanth. Large quantities are used in ice creams and other foods. The gum is soluble in cold water, forms a tasteless mucilage, and is non-poisonous. The poorer grades are used exclusively by the calico-printers.—*Scientific American.*

COUNCIL BUSINESS

A. PH. A. COUNCIL LETTER NO. 1.

PHILADELPHIA, PA., September 30, 1916:

To the Members of the Council:

Motion No. 1 (Election of Members). You are requested to vote on the following applications for membership:

No. 1. Thos. J. France, 42 Hart St., Brooklyn, N. Y., rec. by Hugo Kantrowitz and Frank L. McCartney.

No. 2. Bertha Urdong, 52 St. Nicholas Ave., New York, N. Y., rec. by St. C. R. Gay and F. L. McCartney.

No. 3. Martin Lester Shaffer, 2908 10th Ave., S., Seattle, Wash., rec. by Jos. L. Lengfeld and Clarissa M. Roehr.

No. 4. Daniel Joshua Fry, 280 N. Commercial St., Salem, Oregon, rec. by John M. A. Lane and Ralph Crysler.

No. 5. Gerhard Felix Berkenkotter, Ph.G., Hamill, S. Dakota, rec. by E. C. Bent and Wm. B. Day.

No. 6. George L. Michaels, 32 Vernon Ave., Long Island City, N. Y., rec. by Geo. W. Luft and Joseph Weinstein.

No. 7. J. Frank Strawinski, 3900 Terrace St., Wissahickon, Phila., Pa., rec. by J. W. England and F. P. Stroup.

No. 8. Theodore Rhinehart Heller, 1145 Freas Ave., Berwick, Pa., rec. by H. T. Waldner and Charles H. LaWall.

The following is a list of the members of the Council for the ensuing year:

MEMBERS OF COUNCIL, 1916–1917.*

Alpers, Wm. C., 14th St. & Central Ave., Cleveland, Ohio.

Apple, Franklin M., 3233 W. Berks St., Philadelphia, Pa.

Arny, H. V., 115 W. 68th St., New York, N. Y.

Asher, Philip, 1606 St. Charles Ave., New Orleans, La.

Beal, James H., 801 W. Nevada St., Urbana, Ill.

Beringer, George M., 5th & Federal Sts., Camden, N. J.

Burge, James O., 1502 McGavock St., Nashville, Tenn.

Claus, Otto F., 3513 Hebert St., St. Louis, Mo.

Day, William B., 701 S. Wood St., Chicago, Ill.

DuBois, Wm. L., 379 Main St., Catskill, N. Y.

Eberle, Eugene G., Bourse Building, Philadelphia, Pa.

Eldred, Frank R., 3325 Kenwood Ave., Indianapolis, Ind.

England, Joseph W., 415 N. 33rd St., Philadelphia, Pa.

Fennel, C. T. P., 614 W. Court St., Cincinnati, Ohio.

Glover, Wm. H., 299 Essex St., Lawrence, Mass.

Hall, W. A., 200 Griswold St., Detroit, Mich.

Hensel, Samuel T., 351 Mercantile Bldg., Denver, Col.

Hilton, S. L., 1033 22nd St., Washington, D. C.

Hopp, Lewis C., 1104 Euclid Ave., Cleveland, Ohio.

Hynson, H. P., 423 N. Charles St., Baltimore, Md.

Kauffman, George B., 235 High St., Columbus, Ohio.

Koch, J. A., Bluff & Pride Sts., Pittsburgh, Pa.

Kuever, R. A., College of Pharmacy, Iowa City, Iowa.

LaPierre, E. H., 80 River St., Cambridge, Mass.

Mason, Harry B., P. O. Box 484, Detroit, Mich.

Mayo, Caswell, A., 66 West Broadway, New York, N. Y.

McElhenie, Thos. D., 259 Ryerson St., Brooklyn, N. Y.

Roehr, Clarissa M., University Hospital, San Francisco, Cal.

Rogers, Charles H., West Va. University, Morgantown, W. Va.

Sayre, L. E., University of Kansas, Lawrence, Kansas.

Seltzer, L. A., 32 Adams St., W., Detroit, Mich.

Snow, Clyde M., 701 S. Wood St., Chicago, Ill.

Stewart Francis E., 11 W. Phil-Ellena St., Philadelphia, Pa.

Turner, J. L., 281 Green Ave., Brooklyn, N. Y.

Utech, P. Henry, 209 Chestnut St., Meadville, Pa.

Whelpley, Henry M., 2342 Albion Place, St. Louis, Mo.

White, William R., 311 Grace St., Nashville, Tenn.

Wilbert, M. I., 1621 35th St., N. W., Washington, D. C.

*Please report errors of name or address.

Wilkerson, J. A., 2036 Russell St., St. Louis, Mo.

Wulling, F. J., University of Minnesota, Minneapolis, Minn.

The following committees have been elected by the Council for 1916–17:

COMMITTEE ON FINANCE.

J. A. Koch, Chairman, Pittsburgh; Otto F. Claus, St. Louis, Mo.; E. H. LaPierre, Cambridge, Mass.

COMMITTEE ON PUBLICATION.

J. W. England, Chairman, Philadelphia, Pa.; H. B. Mason, Detroit, Mich.; Geo. M. Beringer, Camden, N. J.; J. H. Beal, Urbana, Ill.; C. A. Mayo, New York, N. Y.

Ex-officio Members—The Editor, Reporter on the Progress of Pharmacy, General Secretary and Treasurer.

COMMITTEE ON INVESTED AND TRUST FUNDS.

Wm. B. Day, Chairman, Chicago, Ill.; Eugene G. Eberle, Philadelphia, Pa.; Charles Holzhauer, Newark, N. J.; H. M. Whelpley, St. Louis, Mo.

COMMITTEE ON CENTENNIAL FUND.

F. J. Wulling, Chairman, Minneapolis, Minn.; J. A. Koch, Pittsburgh, Pa., Wm. B. Day, Chicago, Ill.

AUDITING COMMITTEE.

Otto F. Claus, Chairman, St. Louis, Mo.; J. W. Mackelden, St. Louis, Mo.; Charles Gietner, St. Louis, Mo.

COMMITTEE ON TRANSPORTATION.

Thos. F. Main, Chairman, New York, N. Y.; Wm. B. Day, Chicago, Ill.; Lewis C. Hopp, Cleveland, Ohio; H. M. Whelpley, St. Louis, Mo.; Charles G. Merrell, Cincinnati, Ohio; Charles Caspari, Jr., Baltimore, Md.; Fred. J. Lackenbach, San Francisco, Cal.; E. Floyd Allen, Minneapolis, Minn.; F. C. Godbold, New Orleans, La.; W. S. Elkins, Jr., Atlanta, Ga.; C. Herbert Packard, East Boston, Mass.; F. W. Nitardy, Denver, Colo.; with the General Secretary and Local Secretary, ex-officio members.

COMMITTEE ON NATIONAL FORMULARY.

————————, Chairman,————————; W. L. Scoville, Vice-Chairman, Detroit, Mich.; Clyde M. Snow, Chicago, Ill.; H. A. B. Dunning, Baltimore, Md.; A. B. Stevens, Ann Arbor, Mich.; Samuel L. Hilton, Washington, D. C.; Otto Raubenheimer, Brooklyn, N. Y.; Chas. H. LaWall, Philadelphia, Pa.; Leonard A. Seltzer, Detroit, Mich.; Geo. M. Beringer, Camden, N. J.; Harry V. Arny, New York, N. Y.; M. I. Wilbert, Washington, D. C.; Wm. A. Hall, Detroit, Mich.; Adam Wirth, New Orleans, La.; E. Fullerton Cook, Philadelphia, Pa.

COMMITTEE ON STANDARDS.

Henry Kraemer, Philadelphia, Pa.; Eustace H. Gane, New York, N. Y.; B. L. Murray, Rahway, N. J.; W. A. Puckner, Chicago, Ill.; John G. Roberts, Philadelphia, Pa.; Otto Raubenheimer, Brooklyn, N. Y.; George D. Rosengarten, Philadelphia, Pa.; M. I. Wilbert, Washington, D. C.; J. A. Koch, Chairman, Pittsburgh, Pa.; H. H. Rusby, Newark, N. J.; F. R. Eldred, Indianapolis, Ind.; John M. Francis, Detroit, Mich.; Elmer E. Wyckoff, Brooklyn, N. Y.; L. D. Havenhill, Lawrence, Kan.; and E. L. Newcomb, Minneapolis, Minn.

COMMITTEE ON RECIPE BOOK.

W. L. Scoville, Detroit, Mich.; W. H. Glover, Lawrence, Mass.; Curt P. Wimmer, New York, N. Y.; John K. Thum, Philadelphia, Pa.; I. A. Becker, Chicago, Ill.; Clarissa M. Roehr, San Francisco, Cal.; Clarence G. Spalding, New Haven, Conn.; E. Fullerton Cook, Philadelphia, Pa.; William Gray, Chicago, Ill.; Theo. D. Wetterstroem, Cincinnati, Ohio; P. Henry Utech, Meadville, Pa.; Wm. L. Cliffe, Philadelphia, Pa.; Otto Raubenheimer, Chairman, Brooklyn, N. Y.; Henry P. Hynson, Baltimore, Md.; and M. I. Wilbert, Washington, D. C.

COMMISSION ON PROPRIETARY MEDICINES.

Martin I. Wilbert, Washington, D. C.; John C. Wallace, New Castle, Pa.; Charles Caspari, Jr., Baltimore, Md.; Thomas F. Main, New York, N. Y.; and James H. Beal, Chairman, Urbana, Ill.

J. W. ENGLAND,
Secretary of the Council.
415 N. THIRTY-THIRD ST., PHILA., PA.

MEMORANDA.

Treasurer H. M. Whelpley submits the following covering the period from August 18th to Sept. 18th, 1916:

Residence Unknown.

Name.	*Former Address.*
Bernhard Magnus,	Syracuse, N. Y.
Carey, H. B.,	Care Cal. College of Pharm., San Francisco, Cal.
Chambers, R. T.	529 San Pedro Ave., San Antonio, Tex.
Duignan, John,	Regimental Hosp. 27th Inf., Texas City, Texas.
Jenson, Carroll,	333 S. Mont. St., Butte, Mont.
Liebmann, Elias,	308 E. 57th St., New York, N. Y.
Miller, A. N.,	306 E. 165th St., New York, N. Y.
Moulder, Bettie Leona,	1429 Ocean Front, Santa Monica, Cal.
Powell, Muzelle,	Klemme, Ia.
Rogoff, Julius M.,	Medical Dept., Vanderbilt Univ., Nashville, Tenn.
Stickland, Bert W.,	1500 Broadway, Denver, Col.
Trainer, Frank,	Douglas, Ariz.
Ryer, Joseph S.,	1575 Genesee St., Buffalo, N. Y.
Bacon, C. C.,	2038 Cherry St., Philadelphia, Pa.
Bussey, T. E.,	Ft. Sam Houston, Texas.
Seith, L. F.,	Military Hosp., Zamboango, Mindanao, P. I.
Bratter, B.,	1204 Evergreen Ave., New York, N. Y.
Fields, J. D.,	Lewis Hall, Univ. of Washington, Seattle, Wash.
Bloch, J. M.,	17 Poplar St., Richmond Hill, Long Island, N. Y.
Woolsey J. F.,	1104 Euclid Ave., Cleveland, Ohio, care Mayell & Hopp Co.

Resigned.

Sauerbrunm, O. O., Columbus, Ohio.
Lewis, C. R., Cripple Creek, Colo.
Strickland, F. N., Providence, R. I.
Blum, O. C., Columbus, O.
LaWall, Edgar S., Catasauqua, Pa.

Suspended for Non-Payment of Dues.

Robinson, K. N., Warrensburg, Mo.
Wheeler, J. B., Huron, S. Dakota.

A. PH. A. COUNCIL LETTER NO. 2.

PHILADELPHIA, PA., October 9, 1916.

To the Members of the Council:

GENTLEMEN:

Motion No. 1 (Election of Members, Applications Nos. 1 to 8, inclusive) has received a majority of affirmative votes.

In list of members of Committee on Standards (C. L. No. 1, page 3) the name of George M. Beringer was omitted. Please add name to list.

At the adjourned meeting of the fifth session of the Council for 1915–16, held at Atlantic City on September 7, 1916, the Chairman of the Council was directed to appoint a committee of five to study the present method of revising the National Formulary and to provide for a system of financial control for the next revision of the National Formulary, the committee to report at the next annual meeting.

In accordance with this action, Chairman Hopp advises that he has appointed the following Committee on Financial Control of N. F.: George M. Beringer, Harry V. Arny, W. L. Scoville, J. A. Koch and H. M. Whelpley.

At the meeting of the first session of the Council for 1916–17, held at Atlantic City on September 7, 1916, the Chairman of the Council was directed to appoint a committee of three to revise the by-laws of the Council, to report at the next annual meeting.

Chairman Hopp advises that he has appointed the following Committee on Revision of By-Laws of the Council: J. W. England, J. H. Beal and H. M. Whelpley.

At the meeting of the first session of the Council for 1916–17, held at Atlantic City on September 7, 1916, James O. Burge, of Nashville, Tenn., was elected Honorary President of the Association for 1916–17.

Mr. Burge writes in relation to the honor conferred:

"I am certainly proud of the honor, and coming so unexpectedly, makes me appreciate it the more, because it has been so long since I attended a meeting of the Association. I thought all of my friends had forgotten I was in the land of the living. I am happier therefore to know, that although absent, I am still remembered. I will now have to go to work in earnest to prove myself worthy of the honor which has been conferred upon me."

Under date of September 30, 1916, M. I. Wilbert writes:

"In connection with the work of the several standing committees of the American Pharmaceutical Association, it has occurred to me that a rather disagreeable feature of this committee-work might be overcome by requesting the chairmen of these several committees to supply the members of their committees with stamped addressed envelopes when a reply to an inquiry is necessary or is expected. This practice has been generally followed in connection with the work of the committees of the American Medical Association and has worked out very satisfactorily in practice. It obviates the necessity of individual

members expending their own money for postage and frequently insures a reply that would otherwise not be forthcoming. If you think it necessary or desirable, I would offer as a motion that the Council suggest to the chairmen of the standing committees of the Association that they supply members of their committees with stamped-addressed reply-envelopes or include such a stamped-addressed envelope in all communications that entail replies. I do not think it necessary or advisable to use the word "direct" and the motion as outlined above would answer all reasonable requirements and the suggestion would certainly be acted on by chairmen of committees that require any considerable amount of correspondence."

The letter of Mr. Wilbert's was referred to General Secretary Day, who writes as follows:

"I have your favor of the 2nd, and I believe that Mr. Wilbert's suggestion is a good one. If we really expect committees to do the work assigned to them, we ought to be willing to stand the expense of postage connected with the work.

"I can readily understand that the chairman or member of a committee hesitates to turn in a bill for postage and yet should not be expected to stand this expense when he is giving his time and effort to the Association without monetary compensation. I think it would be well to establish the custom of supplying the chairman of each committee with a reasonable number of stamped envelopes and postal cards to carry on the work of his committee, the number to be determined by consulting the chairman."

Motion No. 2 (Postage and Stationery for Members of Standing Committees). Moved by E. G. Eberle, seconded by G. M. Beringer, that the General Secretary be authorized to furnish to the Chairman of each standing committee of the Association a reasonable supply of postage and stationery to carry on the work of the committee, to be determined by consulting the chairman.

Under date of October 6, the following communication has been received from Frank R. Eldred:

"I wish to make the following motions for presentation to the Council:

First, that the 1917 meeting be held during the week of August 27 to September 1.

Second, that Mr. F. E. Bibbins be chosen Local Secretary for the 1917 meeting.

The local members wish to have these two questions settled as soon as possible so that the arrangements for the meeting can go forward."

Motion No. 3 (Time of Holding the 1917 or Sixty-fifth Annual Meeting of the Association). Do you favor holding the 1917 or Sixty-fifth Annual Meeting of the American Pharmaceutical Association during the week of Monday, August 27, to Saturday, September 1, 1917?

Motion No. 4 (Local Secretary for 1917). Do you favor the election of Francis E. Bibbins, of Indianapolis, as Local Secretary for 1917?

Motion No. 5 (Election of Members). The following applications for membership have been received:

No. 9. Corliss Page Dean, Hospital Steward, U. S. Navy, 11 Bull St., Newport, R. I., rec. by J. F. Rupert and Wm. B. Day.

No. 10. Henry Terrell Mash, Jr., Thomasville, Ga., rec. by R. Thomas and and Wm. B. Day.

No. 11. Frank Vinton Eidson, Thomasville, Ga., rec. by R. Thomas and Wm. B. Day.

No. 12. Miguel Angel Roman, 630 S. Ashland Blvd., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 13. Florence Louise Bentz, 894 Michigan Ave., Buffalo, N. Y., rec. by Willis G. Gregory and Wm. B. Day.

No. 14. Bertha B. Arner, 128 Fordham Drive, Buffalo, N. Y., rec. by Willis G. Gregory and Wm. B. Day.

No. 15. James C. Dildine, 10 Purdy St., Bath, N. Y., rec. by Willis G. Gregory and Wm. B. Day.

No. 16. James William Smellie, Hammondsport, N. Y., rec. by Willis G. Gregory and Wm. B. Day.

No. 17. Ira E. Cutler, 2122 S. Clayton St., Denver, Colo., rec. by Wm. A. Hover and F. W. Nitardy.

No. 18. Wilbur Dwight Engle, 2233 South Columbine St., Denver, Colo., rec. by Wm. A. Hover and F. W. Nitardy.

No. 19. William Edward Pfirter, Ph.G., 731 Shotwell St., San Francisco, Cal., rec. by Jennie Maguire White and Clarissa M. Roehr.

J. W. ENGLAND,
Secretary of the Council.
415 N. THIRTY-THIRD ST., PHILA., PA.

A. PH. A. COUNCIL LETTER NO. 3.

PHILADELPHIA, PA., October 21, 1916.

To the Members of the Council:

Motion No. 2 (*Postage and Stationery for Members of Standing Committees*), *Motion No. 3* (*Time of Holding the 1917 or Sixty-fifth Annual Meeting of the Association*), *Motion No. 4* (*Election of Francis E. Bibbins as Local Secretary*), and *Motion No. 5* (*Election of Members; Applications Nos. 9 to 19, inclusive*), have each received a majority of affirmative votes.

In re Council Letter No. 1 (p. 3): No chairman was named for Committee on National Formulary, because none was elected at the Atlantic City meeting to succeed C. Lewis Diehl, resigned. Add name of George M. Beringer to Committee on Standards, term expiring in 1918.

Motion No. 6 (*Appropriation of $2500 to the National Formulary IV Account*). Moved by J. A. Koch, seconded by W. B. Day, that $2500 be appropriated to the National Formulary IV Account with which to pay bills for the National Formulary IV.

The appropriation is approved by the Committee on Finance. Sufficient funds have been received from the sale of the book (N. F. IV) to make the appropriation without using the general receipts.

Motion No. 7 (*Election of Members*). The following applications for membership have been received:

No. 20. Cecil Read Bloom, Clearfield, Pa., rec. by Louis Saalbach and Fred. J. Blumenschein.

No. 21. Morton Leonard Bullard, 45 Free St., Dexter, Me., rec. by U. C. Muldoon and John D. Glancy.

J. W. ENGLAND,
Secretary of the Council.

415 N. 33RD ST., PHILA., PA.

A. PH. A. COUNCIL LETTER NO. 4.

PHILADELPHIA, PA., October 31, 1916.

To the Members of the Council:

Motion No. 6 (*Appropriation of $2500 to the National Formulary*) and *Motion No. 7* (*Election of Members; applications Nos. 20 and 21*) have each received a majority of affirmative votes.

W. B. Day writes:

"As Chairman of the Committee on Invested and Trust Funds, I have made inquiry through the Fort Dearborn National Bank of Chicago concerning the institutions where the funds of the Association are kept. These institutions are the International Bank of St. Louis, the Boston Penny Savings Bank of Boston, the Title Guarantee and Trust Company of St. Louis.

"The reply of the Fort Dearborn National Bank is entirely favorable. They state that 'We have no reason to change our opinion as expressed to you heretofore regarding the International Bank of St. Louis, and the Boston Penny Savings Bank. The former mentioned bank has been a valued correspondent of ours for a number of years, and we believe entitled to your confidence. The latter named institution does not carry an account with us but information we have received from our friends in Boston is favorable.' and 'Information which we have received from our St. Louis friends regarding the Title Guaranty Trust Company is entirely favorable. We are told that the concern confines itself to title and guarantee business and are said to be doing a successful business. They are reported as owning a considerable amount of the stock of the American Trust Company and we are told that their statement of the first year showed a surplus and undivided profits of $1,190,000. Those interested are highly regarded and are said to be men of excellent ability and high integrity.' "

The following communication has been received:

"I move the election of Professor Wilbur L. Scoville as Chairman of the Committee on National Formulary.

CLYDE M. SNOW.

I second the motion to elect Professor Wilbur L. Scoville Chairman of the Committee on National Formulary.

WM. B. DAY."

Are there any further nominations?

The following communication has been received:

"I move the election of Bernard Fantus, M.D., Professor of Pharmacology, University of Illinois College of Medicine, to membership on the Committee on National Formulary to fill the vacancy caused by the resignation of Professor C. Lewis Diehl.

CLYDE M. SNOW.

I second the motion to elect Bernard Fantus, M.D., as a member of the Committee on National Formulary.

WM. B. DAY."

Are there any further nominations?

The Secretary has received the following

letter (dated October 17) from Dr. James H. Beal:

"When I accepted a place on the Committee on Publication I overlooked the fact that the Committee had business relations with the Midland Publishing Company, in which I have been a stockholder for many years, but for a long time have not paid any attention to the business and know but little more about the transactions of the Company than you do. This relation, however, makes it important, both for the Committee and for my own sake, that I should not be a member of the Committee on Publication, and I therefore tender my resignation as a member of the same.

"I feel it highly important that this resignation be accepted, for the reasons above stated, and will be personally obliged if you will offer a motion to the Council to that effect."

Upon receiving this communication, your Secretary realizing (as Chairman of the Committee on Publication) the value of Dr. Beal's services as a member of the Committee on Publication, wrote him and asked him if he could not possibly retain his place on the committee, for a time at least, but he writes (date of 26th inst.):

"Your kind favor of October 21 at hand, and I appreciate the thought which leads you to request me to retain a place on the Committee on Publication. I am sorry that I cannot see my way clear to comply with your request even to remain a member temporarily. Please, therefore, submit my resignation, with a motion in favor of its adoption."

Motion No. 8 (*Resignation of Dr. James H. Beal as Member of Committee on Publication*). Moved by G. M. Beringer, seconded by Dr. F. E. Stewart, that, under existing circumstances, the resignation of Dr. James H. Beal as a member of the Committee on Publication be accepted with regrets.

Under date of 28th inst., Otto Raubenheimer, Chairman of Committee on A. Ph. A. Recipe Book, writes:

"Enclosed please find resignation of Prof. Henry P. Hynson from the Committee on A. Ph. A. Recipe Book, which explains itself.

"As much as I would like to have Prof. Hynson remain on the Committee, you will see that his views on the Recipe Book are entirely different from my own as well as that of the other members. I would, therefore, recommend to the Council that the resignation of Prof. Hynson will be accepted with regrets.

"I would, furthermore, recommend to the Council that Prof. Charles H. LaWall, of Philadelphia, would be appointed in his place. In explanation of this recommendation, permit me to state that Prof. LaWall has contributed several formulas and has assured me of his hearty support on the work of the Committee."

The letter of Prof. Hynson to Chairman Raubenheimer is of date of October 20th, and reads as follows:

"I am in receipt of Bulletin No. 11 of the Committee on A. Ph. A. Recipe Book and, while I do not wish to be at all troublesome, I must say that the proposed book is so entirely different from the one I had hoped would be gotten up and some of the formulas suggested, in my opinion, are so at variance with good pharmaceutical ethics that I feel it will be much better for me to resign from the Committee. I, therefore, ask you to accept this as my resignation and to notify the Council. I will keep the Bulletin and binder until my successor is appointed, when I will send them all to him in good order.

"Do not think for one moment that I wish to change the action of the Committee or the Association on this subject. I simply wish to be relieved of any responsibility in connection with the publication of the formulas."

A motion to accept Prof. Hynson's resignation as a member of the Committee on A. Ph. A. Recipe Book (term expiring 1920) is in order, after which, if the motion is adopted, action can be taken to elect a successor.

Very truly yours,
J. W. ENGLAND,
Secretary.

415 N. 33RD ST., PHILADELPHIA, PA.

A. PH. A. COUNCIL LETTER NO. 5.

PHILADELPHIA, PA., November 11, 1916.

To the Members of the Council:

Motion No. 6 (*Resignation of Dr. James H. Beal as Member of the Committee on Publication*) has received a majority of affirmative votes.

Motion No. 9 (*Resignation of H. P. P. Hynson as Member of Committee on Recipe Book*). Moved by P. Henry Utech, seconded by F. J. Wulling, that the resignation of H. P. Hynson as a member of the Committee on

Recipe Book (term expiring 1920) be accepted, with regrets.

Motion No. 10 (Election of Members). The following applications for membership have been received:

No. 22. Robert Lich, 2924 Illinois Ave., Fresno, Cal., rec. by E. C. Bent and J. W. England.

No. 23. William B. Hansen, care Berner's Drug Store, Des Moines, Iowa, rec. by E. O. Kagy and Wm. B. Day.

No. 24. Emil Schoenholzer, Livingston, Montana, rec. by E. O. Kagy and Wm. B. Day.

No. 25. Olin Erb, Absarokee, Montana, rec. by E. O. Kagy and Wm. B. Day.

No. 26. Harry Sumner Noel, 3124 Kenwood Ave., Indianapolis, Ind., rec. by Francis E. Bibbins and W. C. Bartholomew.

No. 27. Gertrude M. Palmer, Grace Hospital, cor. John R. & Willis Aves., Detroit, Mich., rec. by W. C. M. Scott and F. W. R. Perry.

No. 28. Frank Genio Scott, 35 Bates St., Detroit, Mich., rec. by Wilbur J. Teeters and Wm. B. Day.

No 29. Clayton E. Tanke, 2310 Broadway, Indianapolis, Ind., rec. by W. C. Bartholomew and Francis E. Bibbins.

No. 30. George Keyworth Shearer, 16 N. George St., York, Pa., rec. by Charles H. LaWall and Ivor Griffith.

J. W. ENGLAND,
Secretary of the Council.

415 N. 33RD ST., PHILADELPHIA, PA.

A. PH. A. COUNCIL LETTER NO. 6.

PHILADELPHIA, PA., November 30, 1916.

To the Members of the Council:

Motions No. 11 (Election of C. H. LaWall as a Member of the Committee on Recipe Book) and *No. 13 (Recommendation of Mr. Elwood Hendrick as a Member of the Tariff Commission)*, have each received a majority of affirmative votes.

The following Budget of Appropriations for 1917 is recommended by the Committee on Finance:

PROPOSED BUDGET OF APPROPRIATIONS FOR 1917.

Appropriations for General Expenses:			
No. 1.	Salaries	$ 6150	
No. 2.	Printing, Postage and Stationery	1000	
No. 3.	Clerical Expenses, Secretary's Office	416	
No. 4.	Miscellaneous Expenses	200	
No. 5.	Stenographers	350	
No. 6.	Traveling Expenses	200	
No. 7.	Committee on Membership	250	
No. 8.	Committee on Unofficial Standards	100	
No. 9.	Year Book	3000	
No. 10.	Premium on Treasurer's Bond	50	
No. 11.	National Drug Trades Conference	100	
No. 12.	Section on Scientific Papers	25	
No. 13.	Section on Education and Legislation	25	
No. 14.	Section on Commercial Interests	25	
No. 15.	Section of Practical Pharmacy and Dispensing	25	
No. 16.	Section on Historical Pharmacy	25	
No. 17.	Women's Section	25	
No. 18.	National Syllabus Committee	25	
No. 19.	Committee on Recipe Book	50	
		$12041	$12041
Appropriations for Open Accounts:			
No. 20.	Journal	$6250	
	(*a*) Publication $5000		
	(*b*) Clerical Expenses 800		
	(*c*) Postage and Stationery 300		
	(*d*) Freight, Drayage and Miscell. 150		
No. 21.	National Formulary	1000	
No. 22.	Badges and Bars	50	
No. 23.	Certificates	50	7350
			$19391

Do you approve the above Budget? The motion will be known as *Motion No. 17 (Approval of Budget of Appropriations for 1917).*

Motion No. 18 (Election of Members). The following applications for membership have been presented:

No. 39. William Irwin Moore, 566 Kearney St., San Francisco, Cal., rec. by H. C. Christensen and Wm. B. Day.

No. 40. Albert A. Enke, 1332 East 28th St., Oakland, Cal., rec. by H. C. Christensen and Wm. B. Day.

No. 41. Wm. B. Cheatham, 781 Alcatraz Ave., Oakland, Cal., rec. by H. C. Christensen and Wm. B. Day.

No. 42. Carl L. Schmidts, 2524 Milvia St., Berkeley, Cal., rec. by H. C. Christensen and Wm. B. Day.

No. 43. Earl W. Gsell, 113 E. Cent. Ave., Highland Park, Ill., rec. by Wm. B. Day and Wm. Gray.

No. 44. John Davis Brooke, 320 State St., Brooklyn, N. Y., rec. by Jeannot Hostmann and H. V. Arny.

No. 45. Bertram Clarence Steves, 48 West 130th St., New York, N. Y., rec. by

Otto Raubenheimer and Frank L. McCartney.

No. 46. John Arthur Valvano, 2059 1st Ave., New York, N. Y., rec. by Otto Raubenheimer and Frank L. McCartney.

No. 47. Charles A. Oats, 658 9th Ave., cor. 46th St., New York, N. Y., rec. by Louis Berger and Jeannot Hostmann.

No. 48. Max Lapat, 35 West 32nd St., New York, N. Y., rec. by Geo. C. Diekman and Curt P. Wimmer.

No. 49. Morris Phipps, 620 N. 6th Street, Richmond, Va., rec. by Wortley F. Rudd and Albert Bolenbaugh.

No. 50. Herbert Alexander Smith, 3233 North New Jersey St., Indianapolis, Ind., rec. by Mortimer Bye and H. S. Noel.

J. W. ENGLAND,
Secretary.

415 N. 33RD STREET, PHILA., PA.

A. PH. A. COUNCIL LETTER NO. 7.

PHILADELPHIA, PA., December 11, 1916.

To the Members of the Council:

Motions No. 14 (Appropriation of $5000 to the National Formulary Account), No. 15 (Election of Members; Applications Nos. 31 to 38, Inclusive), No. 17, Approval of Budget of Appropriations for 1917) and *No. 18 (Election of Members; Applications Nos. 39 to 50, inclusive)* have each received a majority of affirmative votes.

The vote is called for on *Motion No. 16 (Substitute Motion for Motion No. 12)*, which reads as follows: "That Dr. James H. Beal be appointed Chairman of a special committee, that he is to select, to consider the project for establishing an A. Ph. A. Headquarters; to report to the Association a comprehensive plan covering the scope of the work contemplated through such an agency; a plan for its permanent management; and also a statement as to the amount of endowment fund that will be necessary to provide for sufficient income for this purpose, so that the financial support of the project will be assured." (C. L. No. 8, 21.)

R. A. Kuever writes: "It is my opinion that both 'A. Ph. A. Home' and 'A. Ph. A. Headquarters' are inappropriate titles in so far as it will not be a home in the general sense of that word and that 'Headquarters' carries with it the meaning of a temporary location.

"I would suggest, therefore, 'American Pharmaceutical Association Building' as a substitute."

C. T. P. Fennel writes: "It is with the deepest and sincerest regret to hear of the death of Martin I. Wilbert. The Council has lost a valued member, but American Pharmacy has suffered a greater loss. Mr. Wilbert was devoted to science, to true knowledge for the sake of humanity. Self never entered as a factor—one of the few who labored for the benefits of the many. May his memory be cherished forever."

L. E. Sayre writes: "I have your letter of the twenty-seventh ultimo and I was very much surprised and distressed indeed at the shocking news that such a valuable man should be taken from our professional ranks and from the membership of our most useful workers in our vocation—a man impossible to replace.

Please express my heartfelt sorrow for this loss to the profession and to his many friends."

The following motion has been received:

Motion No. 19 (Resolution Relative to the late Martin I. Wilbert), moved by S. L. Hilton, seconded by Dr. F. E. Stewart, that the Chairman of the Council appoint a committee to prepare resolutions to be sent to the widow of the late Martin I. Wilbert, expressing the sympathies of the members of the Council to her, in her bereavement, and their appreciation of the valuable services Mr. Wilbert has rendered to American Pharmacy and the American Pharmaceutical Association.

J. W. ENGLAND,
Secretary.

415 N. 33RD STREET, PHILA., PA.

A. PH. A. COUNCIL LETTER NO. 8.

PHILADELPHIA, PA., Nov. 27, 1916.

To the Members of the Council:

The Council of the American Pharmaceutical Association is advised of the demise of one of its most valued members, Martin Inventius Wilbert. He died suddenly of cardiac trouble, on Saturday morning, November 25, 1916, at the German Hospital, Philadelphia. The funeral will be in the chapel of the Mary J. Drexel Home, 2100 Girard Avenue, Philadelphia, on Tuesday, November 28, 1916, at 2 P.M.

J. W. ENGLAND,
Secretary.

415 N. 33RD STREET, PHILA, PA.

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.
Committee on Publication: J. W. ENGLAND, *Chairman;* G. M. BERINGER, CASWELL A. MAYO, H. B. MASON, J. H. BEAL, and the Editor-in-Chief of the Journal, General Secretary, Treasurer and Reporter on the Progress of Pharmacy, *ex-officio.*
Office of Publication, 253 Bourse Building, Philadelphia, Pa.

OFFICERS-ELECT OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The newly elected officers of the American Pharmaceutical Association, as announced by the Board of Canvassers, are as follows:

President, Charles Holzhauer, Newark, N. J.

First Vice-President, Alfred R. L. Dohme, Baltimore, Md.

Second Vice-President, Leonard A. Seltzer, Detroit, Mich.

Third Vice-President, Theodore J. Bradley, Boston, Mass.

The three new members of the Council are: Frederick J. Wulling, Minneapolis, Minn.; George M. Beringer, Camden, N. J.; Thomas F. Main, New York City.

These officers assume their duties just before the close of the Indianapolis convention.

The result of the referendum vote on the Year Book will be announced by the Publication Committee, and action thereon will be taken at the annual meeting.

THE INVESTIGATION OF NARCOTIC SALES IN NEW YORK.

The investigations by the New York Narcotic Committee will be helpful in devising means for curtailing the sales of narcotic drugs. There never has been a stronger and more determined effort made to arrive at a knowledge of the means employed for supplying the habitues with drugs, and the Committee, appointed by the State of New York to investigate the subject, has had the hearty coöperation of the drug organizations.

The larger sources of supply evidently are obtained through smugglers, the drugs being sent to adjoining and even distant countries, and thereafter brought back into the United States, and thefts from manufacturers and wholesale dealers. It is a difficult matter, especially at this time, when these drugs are needed by the armies, to discern whether the orders are for legitimate purposes. It was discovered also that some of the bottles containing narcotics bore forged labels of American manufacturers, so that probably foreign drugs are in this way smuggled into this country. The dealers supplying habitues or peddlers have evidently studied their nefarious business from every angle and devised a system. One drug peddler admitted that he made $2000 per month on illegal sales, and further stated that a practically unlimited supply could be obtained in New York City.

The thefts of narcotics have been numerous and reported from nearly every large city; recently in Philadelphia, one jobber reported a theft of $1500 worth of narcotics and another of nearly a like amount. It is generally admitted that drug fiends will not be deterred by any risk in securing the drugs.

The testimony of physicians relative to treatment differed, some contending that habitues needed the drugs, while others stated that they were not necessary and addicts could be more successfully treated without them; many did not believe there was a cure for the affliction so long as the drugs could be obtained.

In order to curtail the sale of narcotics some kind of an agreement must be reached between governments, and state laws must complement the Federal act. The illicit sale or prescribing should be made a felony and a punishment of long term confinement assessed. There is a developing sentiment that drug addicts should be registered, doubtless if this is practicable and could be enforced, the system would at once do away with a large percentage of the drug addicts.

The investigation will doubtless prove of value for providing legislation, and has shown how sincerely the drug trade desires to have this traffic properly and efficiently regulated.

GETTING PHYSICIANS AND PHARMACISTS TOGETHER.

The Weekly New York Health Bulletin says that the Bronx County Pharmaceutical Association is doing a commendable work in bringing the physicians and druggists of the Bronx closer together. The Association has

arranged a series of "propaganda meetings," at which an effort will be made to interest physicians in pharmacopoeal and National Formulary preparations, so that they will prescribe these in place of the many proprietary nostrums which now disfigure the advertising pages of many of even high-grade medical journals. The meetings will be addressed by prominent members of the medical and pharmaceutical profession, and will undoubtedly do much to promote effective cooperation between physician and pharmacist.

THE DEVELOPMENT OF THE AMERICAN PHARMACEUTICAL MANUFACTURING HOUSES.

It must always be a source of satisfaction to retail pharmacists that the American pharmaceutical manufacturing houses developed from retail pharmacies. There the foundation was laid for their larger work. Pharmacists may well have pride in the service they render humanity; a wider publicity of this service should be given and pharmacists can reflect with much gratification thereon. And when they do, there must come also an acknowledgment of the accomplishments of the manufacturers, they are willing and do spend much money without knowing whether there will be any returns from their investment. But that this sincerity of purpose does pay is proven by the success of these establishments. Their research work is for the purpose of having perfect preparations not solely for deriving greater profit. Leaving aside altogether the commercial viewpoint, what a satisfaction there must be when they can say, because of the efficacy of their preparation suffering was relieved and life saved. So also in biological manufacture, many of these products originated in experiments which might have proven large losses, risks were assumed that they would have borne without complaint had they proven failures. So they are well deserving of commendation, and when physicians speak of their service to humanity retail pharmacists and manufacturers should not be forgotten. Let us give deserved credit to physicians and surgeons; they have reaped abundantly in the appreciation of the public, but think also of the millions of lives saved because of the products of the pharmaceutical and biological laboratories. The former have been given recognition, they received valuable publicity; it is time pharmacists had a larger share in these tributes.

CHEMICAL INDUSTRIES.

The public is gaining a better understanding of what chemical manufacturing means as a commercial enterprise. The war has been a great disseminator of chemical information, and misinformation, and there is a more wide-spread appreciation of the value chemical industries are to the United States than obtained a year or two ago.

An investor said the other day, money is not always a fair measure of things, but it is usually a safe proposition to say that when a man puts his money into anything it is because he foresees that thing is of value. So it is that when one stops to think that the total capitalization of new dye and chemical concerns in 1915 was $65,565,000 and that in 1916 the total capitalization of new chemical concerns reached the handsome total of $105,000,000, it is apparent that the American public is gaining a practical knowledge of chemistry as an asset in American manufacturing and commercial life.

CHEMOTHERAPY AND RADIOTHERAPY.

Dr. Isaac Levin says in the *Medical Record* that both chemotherapy and radiotherapy appear to produce their effects by disturbing and rearranging the internal structure of the atom, but the difference between the two methods consists in the fact that in chemotherapy a foreign chemical substance is introduced into the organism and influences the electrons within the atoms of the tissues, while in radiotherapy no foreign substance is introduced, but the waves of ether constituting the various rays disturb the composition of the atom. Dr. Levin states that only experimentation can determine where and when radiotherapy should be attempted, and only when the relationship between the atomic structure of the substance and the wave length of the X-rays is correct, does there take place a selective absorption of the rays by the substance, and the latter is then influenced by the rays.

TECHNICAL LIBRARY TO AID GERMAN INDUSTRY.

Vice-Consul H. E. Carlson at Frankfort-on-Main writes in *Commerce Reports* that according to a recent article in the *Frankfurter-Zeitung* and an interview with a prominent librarian at Frankfort plans are being considered for the establishment of a

general technical library at Frankfort-on-Main, to be open for public use. One of the leading city libraries has become interested in the project, and a beginning already has been made. It is said that the plan is unique among the cities of the German Empire.

A demand exists for a library which will be of service to all the numerous branches of industry and trade in and about Frankfort, the most important industrial center in south and west Germany. In this manner a broader spirit of scientific and technical investigation will be fostered. An attempt will be made to furnish technical information which will have a historical as well as purely scientific value.

Technical libraries have existed previously, but they have not been open to the general public. Such libraries have been the property of scientific societies, technical associations, and the larger industrial concerns. The service rendered by these scattered collections was comparatively small, as it was limited to members of the respective organizations owning them. These were usually hampered by lack of means and lack of facilities for organizing and arranging to the best advantage.

The plan that is now under way would combine these private and semiprivate libraries and put them under the control of one of the established city libraries at Frankfort-on-Main. The library chosen for this purpose is the *Freiherrliche Carl von Rothschildsche Offentliche Bibliothek.*

FRONT FACE.

The Robertson-Bradshaw Company has sent out a New Year letter which contains a series of good thoughts and worthy of reproduction.

A Happy New Year to you!

That means we are facing the future.

To our friends, our business associates, our relatives—even our enemies, if any—we send this greeting: Let the past go!

We have had failures, disappointments, worries—let us step on them and rise to better things!

We have had our triumphs, but they will not do for to-morrow, let them inspire us to new achievement!

We have had our little clashes—well, perhaps now that we know how human we both are we can get along better together.

God put our eyes in the front of our head, let us look forward, not back.

The future is the sky of the present; and light comes from the sky.

In the future we see only better business and bigger, we see honesty, loyalty and courtesy more worth while; the past may be spotted, the future is clear.

Then here's a hand of help to you and a hearty cry of good cheer!

May we all be more courageous to do right and kindlier in the doing, fairer and squarer than ever before.

May we make our workmen more prosperous, our customers more satisfied, our competitors more friendly, and altogether try to make this old world a more decent and brighter place to live in.

May we live this year so that
"Sweeter shall the roses blow
In those far years, those happier years;
And children weep when we lie low
Far fewer tears, far softer tears"

RETURNED GOODS RULES.

Complaint against the abuse of the privilege of returning goods, which has become general within recent months, has led the retail trade board of the Boston Chamber of Commerce to draw up a set of rules governing the return of goods. An advertising campaign was conducted to acquaint the public with the changes, and slips bearing the new rules were sent by merchants to all customers. Goods were divided into two classes, returnable and non-returnable, and regulations governing the return of goods made as follows:

Any article of merchandise which by some good reason is to be returned to a store, must be returned within a reasonable time—six business days.

No articles will be accepted for return unless they are substantially in their original condition; neither will merchandise of any kind which has been used or worn, be accepted for return unless defective or not as represented.

The sales check must accompany all returned merchandise.

Gifts of all kinds (Christmas, wedding, birthday, etc.) if returned, will be accepted only in exchange for other merchandise.

All goods cut from the piece at the request

of the customer, that would have remnant value, are returnable at one-third of purchase price.

Uniform tags will be used on articles bought with the privilege of returning. If these tags have been removed from the article, it will not be accepted for return.

Exceptions are made when there is an error on the part of the store; or in case of defective workmanship at the time of sale.

McKESSON AND ROBBINS INCORPORATED.

On December 26, the firm of McKesson & Robbins was chartered as a New York corporation to deal in chemicals, foodstuffs, surgical instruments, printing stationers, with 10,000 shares at $100 each; 20,000 shares no par value. Capital, $2,000,000. Incorporators are: G. C. McKesson, J. McKesson and H. D. Robbins, 91 Fulton Street, New York City.

SOCIETIES AND COLLEGES.

THE METRIC CONFERENCE.

"The great mass of the world is metric and we are more metric than we know," stated Arthur E. Kennelly, professor of electrical engineering of Harvard University, at the meeting of Section 1 of the American Association for the Advancement of Science, held on the morning of December 27 in the School of Mines building of Columbia University. In proof of his statement Mr. Kennelly called attention to the fact that "Hundreds of thousands of bills for electric current are made every month in terms of the kilowatt hour" and cited other instances in which various measurements are designated in terms of the metric system.

This meeting of Section 1 of the association, held for the purpose of considering the "advisability of adopting the metric standards of weights and measures in the United States," was largely attended by representatives of various colleges, scientific societies, professional and business organizations, commercial interests and the United States Government and was one of the most important of the section meetings of the national body during the annual convention.

DR. KUNZ BLAMES ENGLISH METHODS.

Dr. George Frederick Kunz, in his address as chairman of the section, stated that one of the reasons for the slowness with which the United States adopted the metric system was that much of our trading was with England and that so long as that nation clings to the old system it will be difficult for us to make any change. With the single, exception of England and English colonies the rapid development of our foreign trade is largely dependent upon our adoption of this, "the only international system" is the belief of Dr. Kunz, who stated:

"For the effective development of our foreign trade, for the utilization of the great and unique opportunities in this direction that the world war has given and will give us, it is most urgent that all foreign catalogues and publications issued by our manufacturers should have all dimensions expressed in metric as well as in English weights and measures. This can be done by placing the metric equivalents in parentheses. No better object lesson of the superiority of the metric system could be desired than that which would be afforded in this way, as its uniformity and simplicity would thus be brought directly home to everyone who consulted the figures.

UNIVERSAL LANGUAGE OF WEIGHTS AND MEASURES.

"The increased demand for our goods from South America, and the movement among our manufacturers to take advantage of the check of European exports to South America in order to introduce our productions there more widely and more consistently, works in the same direction. For our manufacturers are slowly learning the important lesson that if we wish to increase our trade in foreign lands we must endeavor to conform to the standards and usages current therein. When the war is over great opportunities will present themselves; but we must prepare now with a universal language of weights and measures."

In answer to the frequently heard argument that the adoption of the metric system would necessitate the "scrapping" of hundreds of thousands of dollars' worth of valuable machinery, the doctor had to say:

"Of the great advantages the metric system possesses in simplifying all necessary calculations regarding dimensions, there can be no question. Hence the opponents of its introduction here base their arguments mainly

upon the difficulties involved in a readjustment of the various mechanical appliances of manufacture to a radically different scale. However, in many cases this difficulty is more apparent than real, and would merely imply a remarking in accord with the metric equivalent of the old measures, and the actual expense and very temporary inconvenience involved would assuredly be many times remunerated by the great advantages secured."

PRESENT SYSTEM "CHAOTIC."

Mr. Kennelly, in his address, characterized the present system of weights and measures as "old-fashioned and chaotic" and announced that metric terms were rapidly gaining in favor among electrical engineers. He stated that the adoption of the newer system would be a simple matter to the man on the street, but that many men in business would undoubtedly be faced with great difficulties and urged that "we people who believe in the metric system have no right to force it suddenly upon those who do not want to use it" and suggested that the endeavor be to introduce it gradually so as not to antagonize any important interests.

William C. Wells, chief statistician of the Pan-American Union, Washington, D. C., pointed out in detail the necessity of the metric system in trade relations with the republics of South America, stating that the necessity was increasing from year to year as the nature of our exports to those countries changed from raw materials to manufactured articles. He said that already there were thousands of workmen in the factories of the United States who, because of dealings with foreign countries, were as familiar with the metric as with the old system of measurement now in force in the country.

Dr. H. V. Arny, professor of chemistry, Columbia University, told how the metric system would affect the every-day life of the community. Fred R. Drake, ex-president of the National Association of Wholesale Grocers, announced himself heartily in favor of the adoption of the system and gave a number of reasons for his belief that metric measurements were more satisfactory than those now in use. H. D. Hubbard, secretary of the Bureau of Standards, Washington, D. C., briefly outlined the history of the system in this country and stated that many departments of the government service were using the system to the exclusion of all others. Dr. Adolph W. Miller, of Philadelphia, presented an able plea for the adoption of the system.

Following the reading of the papers Madame Montesorri explained how her method of teaching prepares the mind of the child for the metric system by inculcating into it the fundamentals of the decimal system.—From the *Paint, Oil and Drug Reporter.*

MINNESOTA PHARMACEUTICAL ASSOCIATION PROPOSES TO PASS A LAW RESTRICTING SALES OF DRUGS TO DRUG STORES.

The Minnesota Pharmaceutical Association is doing good publicity work among citizens, in educating them relative to the importance of restricting sales of drugs to those qualified. The principal object is to eliminate the drug peddler, always a source of danger to the public. While usually these peddlers only distribute household remedies and package goods, they have an opportunity for selling restricted drugs. If the peddler of narcotics and "boot-legger" could be eliminated, a large part of the illicit selling of proscribed drugs and illegal liquor sales would be done away with.

STANDING COMMITTEES OF THE NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION.

President James W. Morrisson of the N. W. D. A., has announced the following committees:

Arrangements and Entertainment—Charles E. Matthews, Sharp & Dohme, Chicago, Ill.

Commercial Travelers and Selling Methods—H. D. Faxon, Faxon & Gallagher Drug Company, Kansas City, Mo.

Credits and Collections—R. R. Ellis, Hessig-Ellis Drug Company, Memphis, Tenn.

Drug Market—Charles L. Huisking, New York.

Employers' Liability and Workmen's Compensation—William W. Gibson, Gibson Drug Company, Rochester, N. Y.

Fire Insurance—Lee M. Hutchins, Hazeltine & Perkins Drug Company, Grand Rapids, Mich.

Legislation—George W. Lattimer, Kauffman-Lattimer Company, Columbus, Ohio.

Local Associations—W. J. Mooney, Mooney-Mueller-Ward Company, Indianapolis, Ind.

Membership—J. D. Price, Orr, Brown & Price Company, Columbus, Ohio.

Memorials of Deceased Members—H. J.

Schnell, Oil, Paint and Drug Reporter, New York.

Paints, Oils and Glass—W. F. Cram, Iowa Drug Company, Des Moines, Iowa.

Prevention of Adulteration—Dr. A. R. L. Dohme, Sharp & Dohme, Baltimore, Md.

Proprietary Goods—Charles A. West, Eastern Drug Company, Boston, Mass.

Rates and Routes—Romaine Pierson, Practical Druggist, New York.

Trade-Marks—E. K. Hyde, Mentholatum Company, Buffalo, N. Y.

Transportation—John T. Kennedy, Evans-Smith Drug Company, Kansas City, Mo.

Special Committee on Suits against Members—William Jay Schieffelin, Schieffelin & Co., New York.

Special Committee on Distribution of Proprietary Articles—Charles Gibson, Walker & Gibson, Albany, N. Y.

Special Committee to Confer with Other Trades Dealing in Druggists' Sundries—W. A. Hover, W. A. Hover & Co., Denver, Colo.

Special Committee to Coöperate with Paint, Oil and Varnish Associations—W. T. Harper, J. W. Edgerly & Co., Ottumwa, Iowa.

Special Committee on Order of Business—James W. Morrisson, Fuller-Morrisson Co., Chicago, Ill.

Special Committee on Metric Weights and Measures—Dr. A. W. Miller, Aschenbach & Miller, Philadelphia, Pa.

Delegates to American Pharmaceutical Association—William Scott, Kiefer-Stewart Company; Marion Ward, Mooney-Mueller-Ward Company; Eli Lilly, Eli Lilly & Co., Indianapolis, Ind.

Delegates to Chamber of Commerce of the U. S. A.—E. D. Taylor, Councillor, Powers-Taylor Drug Company, Richmond, Va.; W. V. Smith, Valentine H. Smith & Co., Philadelphia, Pa.; A. B. Stewart, Stewart & Holmes Drug Company, Seattle, Wash.

Representatives in National Drug Trade Conference—Charles A. West, Eastern Drug Company, Boston, Mass.; George W. Lattimer, Kauffman-Lattimer Company, Columbus, Ohio; C. Mahlon Kline, Smith, Kline & French Company, Philadelphia, Pa.

MASSACHUSETTS COLLEGE OF PHARMACY.

Through the generosity of George Robert White, the Massachusetts College of Pharmacy, in another year, will come into possession of the finest building and equipment of any school of pharmacy in the country. It is to be on Longwood avenue on the corner of Worthington street, the lot having a frontage of about 300 feet on Longwood Avenue and a depth on Worthington Street of 250 feet, covering an area of 75,000 square feet.

The site is in the academic district that includes the Harvard Medical School, Peter Bent Brigham Hospital, Children's Hospital the proposed Lying-in Hospital, High School of Commerce, Simmons College and Girls' Normal School group, which unite in forming one of the greatest educational benevolent and charitable centres in the world.

The exterior of the new building will be renaissance in character, with an imposing central Ionic portico of six columns of limestone, each twenty-eight feet high, approached by a monumental flight of granite steps. The lowest story will be constructed entirely of heavy rusticated limestone, and will carry two stories of red brick laid in broad joints with cornices, window frames, etc., of limestone. The front wall will be set back eighty feet from the line of Longwood Avenue, giving an opportunity for an approach by an esplanade paved with large slabs of stone.

The interior arrangement is the outcome of three or four years' study of the college's requirements made by the teaching staff in conjunction with the architects, and the result appears in the striking simplicity of the floor plan. The ground floor is devoted mainly to two great laboratories, the pharmacy laboratory, 65 x 62 feet, and the chemistry laboratory, 62 x 58 feet, each fifteen feet in height and having accommodations for about 400 students. In connection with these are the balance room, stock rooms, offices for the professors and a general room for men students.

The main floor contains two lecture rooms, for pharmacy and chemistry, respectively, each with accommodations for 300 students at a sitting, with adjacent offices for the instructing staff, and in addition, a monumental main rotunda, vestibule and staircase with floor of honed limestone and walls of Roman travertine, in which are placed tablets of purple Lepanto marble for inscriptions.

Opening from this corridor are the general office, with the dean's office adjoining, the library, a homelike room suited for comfortable study and free from any institutional appearance, the trustees' room, paneled to the ceiling in quartered oak with architraves and

chimney piece of verde antique marble, and large and pleasant quarters for the young women students. Check rooms, store rooms, public telephone booths and all other accessories are to be on this floor.

The main staircase leads to the George Roberts White hall, a beautiful assembly room with a seating capacity for 500, finished and paneled in chestnut with a stucco ceiling and a great stone chimney piece. At the head of the stairs will be a capacious foyer for the convenience of the audience during intermissions. In connection with George Robert White hall there are provided a buffet, a room for storing seats, ante rooms, facilities for illustration by films, etc. The top floor also contains the materia medica and biological laboratories, an alumni room, three class rooms and ample storage facilities.

Concrete exit stairways in towers run from top to bottom of the building. The entire construction is to be fireproof with steel window sashes and terra cotta and steel floor construction. The equipment includes an air washer, a fan ventilating system with thermostatic control, complete telephone system, indirect lighting and site will represent an outlay of over $500,000. The architects are Kilham & Hopkins of 9 Park Street and contracts have been signed for the construction work with the Stone & Webster Engineering Corporation, the building to be completed December 1, 1917.

NEW YORK COLLEGE OF PHARMACY NOTES.

The special attention of the graduates and other friends of the College is called to a lecture to be given by Professor Curt P. Wimmer at the College meeting to be held on the evening of Tuesday, January 16, 1917. The subject of Dr. Wimmer's lecture will be "A Pictorial History of the College of Pharmacy of the City of New York." Dr. Wimmer has devoted a great deal of time to the study of this subject and has succeeded in assembling a considerable amount of historical material of interest. Pictures of the various buildings in which the College resided from time to time, pictures of men who have been prominent in the affairs of the College from its very beginning and finally pictures of publications, etc., issued or used by the College in the earlier days will be shown by means of lantern slides. These will undoubtedly serve to make the lecture one of intense interest. The meeting is open to all and a cordial invitation to attend is hereby extended.

With the termination of the Christmas holidays, the interest of the faculty and student body is now centered in preparations for the final examinations, which commence April 28.

It is planned to reorganize the conditions governing the award of the Trustees' scholarships which annually provide tuition fees for two second-year students, so that there will be brought about a more general endeavor on the part of students to secure such honors.

The College Orchestra is this year under the direction of Dr. George Schneider, of the Analytical Chemistry Department. Dr. Schneider has succeeded in getting together a very complete organization composed as follows: Violins—Miss Elizabeth Kish, '19; S. Jacoff, '18; S. Maser, '18; N. Castellucci, '18; Joseph Triner, '18; J. D'Urgolo, '18; Cellos—K. Kirkland, '17; Dr. C. W. Ballard; Clarinets—E. Mazzolini, '18; R. Ferguson, '18; Cornets—Miss May O'Connor, '17; W. Greenberg, '18; O. J. Blosmo, Special; Drums—David Feldman, '18; Piano—P. Cagnina, '18. Frequent rehearsals have been held and excellent music has been furnished at several of the student affairs.

Mr. O. J. Blosmo, of the Department of Pharmacy of the University of Minnesota, is doing special work with the College in the various departments. It has been very pleasant to have Mr. Blosmo in attendance and it is to be regretted that his leave of absence from Minnesota comes to an end in January.

Mr. William Macsata and Mr. Frank T. Green, formerly students at the Medico-Chirurgical College of Pharmacy, are completing their courses at the New York College.

Mr. Jose Blanco, who completed three years' work at the University of Michigan, is working for his Bachelor of Science in Pharmacy degree.

The second-year class has held its election, with the following result: *President*, D. E. Gitlow; *Vice-President*, S. Benjamin; *Secretary*, Miss Alma Adams; *Treasurer*, B. Markowitz; *Historian*, J. J. Coronel; *Reporter*, P. D. Bloom.

The College has received a framed and enlarged photograph of the late Professor John Oehler, the gift of his widow. This will be given a prominent place in the College collection as an inspiration to those who will come after. Those who know him will need no such reminder to keep alive the memory of John Oehler's stirling qualities.

WILBERT MEMORIAL MEETING.

Forty-one representatives of various branches of the pharmaceutical and medical professions gathered in the Philadelphia College of Pharmacy on Thursday afternoon, December 7, 1916, to do honor to the memory of Martin Inventius Wilbert, who passed away on Saturday morning, November 25th. Twenty-seven organizations of the chemical, pharmaceutical and medical professions were represented and Mr. Howard B. French, president of the Philadelphia College of Pharmacy, was chosen to preside at the meeting. Owing to pressure of other engagements, Mr. French relinquished the chair to Mr. George M. Beringer when the meeting was about half over. Robert P. Fischelis was chosen to act as secretary of the meeting. The following bodies were represented:

New York Branch of American Pharmaceutical Association.
New York College of Pharmacy.
Baltimore Branch of American Pharmaceutical Association.
Maryland College of Pharmacy.
New Jersey Pharmaceutical Association.
American Pharmaceutical Association.
American Chemical Society.
American Therapeutic Society.
American Academy of Medicine.
American Medical Association.
Pennsylvania Medical Association.
Pennsylvania Pharmaceutical Association.
Pennsylvania Society for Prevention of Tuberculosis.
United States Pharmacopoeial Revision Committee.
National Formulary Revision Committee.
Council on Pharmacy and Chemistry of the American Medical Association.
Pennsylvania Board of Pharmacy.
College of Physicians of Philadelphia.
Philadelphia College of Pharmacy.
Philadelphia Branch of American Pharmaceutical Association.
German Hospital.
Philadelphia Association of Retail Druggists.
Philadelphia Drug Exchange.
Philadelphia County Medical Society.
Philadelphia Pediatric Society.
Child Federation of Philadelphia.
Philadelphia Medical Club.

While the Secretary made note of the representatives present, Chairman French read communications from the following:

Dr. H. V. Arny, New York City.
Dr. John B. Deaver, Philadelphia.
Mr. John F. Hancock, of Baltimore.
Mr. S. L. Hilton, of Washington, D. C.
Mr. Joseph L. Lemberger, Lebanon, Pa.
David J. Reese, Philadelphia, Pa.
Dr. I. V. S. Stanislaus, of Lock Haven, Pa.

Professor Remington moved that a committee be appointed which would as far as possible represent the associations taking part in the meeting, to draw up suitable resolutions, have them engrossed and sent to Mrs. Wilbert. The motion was seconded by Dr. F. E. Stewart, and carried. Professor Kraemer moved that a copy of these resolutions be also sent to Dr. Wilbert's parents. This motion was seconded by Mr. Thum and carried.

President French then declared the meeting open for comments on the life and activities of the departed. Professor Remington, in a few well-chosen words, related the circumstances connected with Dr. Wilbert's death and gave a general outline of his career in pharmacy. Dr. F. E. Stewart endorsed the sentiments expressed by Professor Remington and pointed out what a loss had come to professional pharmacy by the death of Dr. Wilbert. Mr. H. E. Smith, vice-president of the German Hospital, spoke of Dr. Wilbert's connection with that institution, lauding his work very highly. E. G. Eberle read a beautiful tribute summing up the activities of Dr. Wilbert during his lifetime and referring to his influence upon modern pharmaceutical and medical thought. Dr. H. P. Hynson feelingly expressed his sense of loss through Dr. Wilbert's death as he had been an intimate friend of the deceased for many years and shared his views on the pharmaceutical problems of the day. He urged that Wilbert's life and works be made a subject of careful study by the coming generation of pharmacists as great good would surely come of his work if it be carried on to its ultimate conclusion. Professor Hostmann also expressed the view that Wilbert's influence on the younger men in pharmacy would be a profound one. Dr. J. W. Sturmer spoke of Dr. Wilbert's activities in the Philadelphia Branch of the American Pharmaceutical Association which he helped to organize, and said that the many printed pages in our pharmaceutical publications were monuments to Wilbert's career. His work has ceased but his influence will go on indefinitely. Professor C. H. LaWall referred to Dr. Wilbert's work as a member of the National Formulary Revision

Committee and as the author of "Digest of Comments on the Pharmacopoeia and National Formulary." Professor Henry Kraemer read a letter from one of Dr. Wilbert's brothers in which M. I. Wilbert's early history was portrayed. Dr. William D. Robinson, who had worked with Dr. Wilbert at the German Hospital, commented upon his scientific attainments, especially in the operation and development of the X-ray. He stated that Wilbert had been of incalculable value to the medical profession and had been ready and willing at all times to assist physicians in their work.

Other speakers were Drs. P. Samuel Stout, A. T. Pollard, Charles L. Turnbull and Franklin M. Apple.

Mr. George M. Beringer concluded the remarks with a reference to the magnitude of Wilbert's work and then appointed the following Committee on Resolutions:

Chairman, Joseph P. Remington, W. D. Robinson, Henry Kraemer, E. G. Eberle, R. P. Fischelis.

The meeting adjourned at 4.25 P.M.

ROBERT P. FISCHELIS, *Secretary*.

RESOLUTIONS IN MEMORY OF MARTIN I. WILBERT.

The following resolutions have been sent to the JOURNAL from the German Hospital, Philadelphia:

MARTIN INVENTIUS WILBERT.

WHEREAS, The Board of Trustees of the German Hospital have learned with profound sorrow of the death of Dr. Martin I. Wilbert, which occurred on November 25, 1916, at this Hospital.

WHEREAS, The late Dr. Wilbert occupied the position of Apothecary in this Institution from 1891 until 1908, and Director of the X-Ray and Photographic Department from 1899 to 1908, leaving his labors with us after eighteen years of splendid service to accept a position of wider scope in the Federal Service at Washington, establishing by his signal ability and indefatigible perseverance a unique and enviable reputation in the wolrd of Medicine and Pharmacy.

Resolved, That the Board of Trustees of the German Hospital deplore his early death at the age of fifty-one, while still in the prime of his life and activities.

Resolved, That the Board of Trustees tender to the family of our deceased friend their heartfelt sympathy in the loss which they have sustained.

Resolved, That a copy of this minute be sent to the members of the late Dr. Wilbert's family and that copies of these resolutions be sent to the *Journal of the American Medical Association*, to the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION and the *American Journal of Pharmacy*.

G. A. SCHWARZ, *President*.

ADOLF HELLWEGE, *Secretary*.

ST. LOUIS COLLEGE OF PHARMACY.

The advantages offered to students of pharmacy by the extensive and well arranged collections of a botanical garden formed the subject of a lecture delivered by Mr. William W. Ohlweiler, of the Missouri Botanical Garden staff to the students of the St. Louis College of Pharmacy.

Mr. Ohlweiler was introduced by Mr. William C. Bolm, a member of the Committee on course of study, who gave a brief account of the garden and its founder, Mr. Henry Shaw, who left it to the city in perpetuity by will in 1889. More than fifty years ago, Mr. Shaw, who was one of the founders of the St. Louis College of Pharmacy, declared that the facilities for study afforded by the garden should be free to the St. Louis College of Pharmacy.

Mr. Ohlweiler's lecture was in the nature of a general guide to the garden, and was illustrated with a number of very striking slides, showing the old formal garden as it existed during Mr. Shaw's lifetime and for some years after his death, and the garden as it is to-day with its spacious conservatories, growing houses, laboratories, libraries, etc. The collection of economic plants—in which are included those used for medicinal purposes—was especially mentioned, and attention called to the fact that types of nearly all medicinal plants can be seen in growth in the conservatories, even in the winter-time. In case the students of the College desire to visit the garden in a body they will be furnished guides by the garden officials, who will point out the situation of the various departments so that the students may know where to find things when they go out individually or in small groups.

So heartily is the Director of the Missouri Botanical Garden, Dr. George T. Moore, desirous of making it an adjunct to the various institutions of learning and others in which botany plays an important part, as in the drug trade for example, that, with the assistance of his staff, he has planned a number of

improvements designed to make it more efficient than it is at the present time, plans which are being carried out as rapidly as circumstances permit. The St. Louis College of Pharmacy students feel inspired by Mr. Ohlweiler's address to make practical use of the facilities of the garden in connection with Dr. Wall's lectures on pharmacognosy.

UNIVERSITY OF ILLINOIS SCHOOL OF PHARMACY.

The School of Pharmacy of the University of Illinois was represented at the Drug Show recently held at the Coliseum under the auspices of the Chicago Retail Druggists' Association. The exhibit of the school included a number of the new official preparations made by the students, among these preparations being the elixirs of low alcohol content and the petroxolins; series of extraction processes were shown; also a selection of specimens from the museum and photographs of the new college buildings and the laboratories showing the classes at work and the class picture of 1916. The exhibit of the school attracted a good deal of attention and was visited by a large number of persons, among whom were a large number of alumni. The school was well pleased with the result and expects to exhibit again next year.

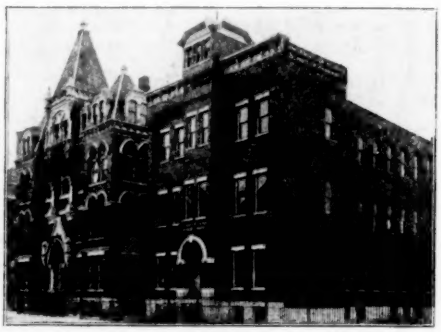
In December, 1915, the University purchased for the School the property located at the corner of Wood and Flournoy Streets and comprising eight city lots with two large brick buildings. The new quarters were occupied in June, 1916.

The new location is in the great medical center of Chicago and close to the dental and medical colleges of the University. It is removed from the noise of the business district, yet is convenient to various lines of transportation.

The college property has a frontage of two hundred and one feet on Wood Street and one hundred and twenty-four feet on Flournoy Street.

The college buildings include two substantial brick structures, which are to be connected at each floor by a stair-tower building now under construction. Both have daylight from four sides and electric lights throughout, and are heated by steam.

The larger building, known as the College Building, is sixty by eighty feet square and four stories in height. It contains the offices,



the library, the museum, the microscopical laboratory, the bacteriological laboratory, a large auditorium, two smaller lecture halls, a recitation room, several preparation rooms and private laboratories for the teachers, students' rooms, and locker rooms.

The smaller building, known as the Laboratory Building, is forty-four by eighty-eight feet square and three stories in height. It contains the pharmaceutical laboratory, the laboratory for quantitative analysis, the laboratory for qualitative analysis and several private laboratories for the teachers, as well as store rooms and supply rooms.

THE PHARMACIST AND THE LAW.

ASSOCIATION MEMBERSHIP BY LAWS.

Several State laws practically require that a pharmacist, in order to be registered, must be a member of the State association. Iowa is now contemplating such enactment, Montana has such provision and the secretary states that when their State association was twenty years old the membership was less than one hundred; now they have one thousand members. Certainly required membership in a State association could be made an additional safeguard for the public.

NEW JERSEY BOARD SEEKS MORE POWER.

The New Jersey State Board of Pharmacy wants its powers increased to permit more stringent regulation of pharmacy in New Jersey. Numerous suggestions for additional legislation are made in the board's annual report to Governor Fielder.

The legislation sought is to give the president of the board power to issue subpoenas and take oaths in investigations to ferret out violations. The board also wants power to refuse

and revoke certificates to practice when applicants or druggists are not of good moral character, when registrations are obtained fraudulently or when applicant or druggist is addicted to narcotic drugs or stimulants and when convicted of two violations of the anti-narcotic law.

It is suggested that legislation should be sought to have reciprocal relations governing certificates with other states when the regulations of those States meet the requirements of the New Jersey board. The board also wants its rule amended so that students applying for licenses shall be graduates of a school approved by it. Another recommendation is that pharmacists should be required to display on the exterior of their stores the proprietor's name, and that of the registered druggist, in order to fix responsibility.

VACCINATION RULE UPHELD BY PENNSYLVANIA COURT.

In an opinion by President Judge Orlady, the Superior Court, November 13, sustained the decision of the Quarter Sessions Court in the case against William Gillen, who refused to send his two children, aged 9 and 10, to school because he opposed vaccination.

Gillen was found guilty before a magistrate of a violation of the act of May 18, 1911, known as the Compulsory School Law, and was sentenced to pay a fine of $2 and costs. He appealed to the Quarter Sessions Court, where the conviction was upheld, and he then appealed to the Superior Court.

Section 1510, of the Compulsory School law, provides that: "Any pupil prevented from attending school on account of the health or sanitation laws of Pennsylvania or by the sanitary regulations of the local Board of Health or the Board of School Directors, is hereby relieved from complying with the provisions of this act concerning compulsory attendance, during such time as he is thereby prevented from attending school."

The act of June 12, 1895, known as the Compulsory Vaccination Law, provides that: "All principals or other persons in charge of schools are required to refuse the admission of any child to the school under their charge or supervision, except upon a certificate signed by a physician, setting forth that such has been successfully vaccinated, or that it has previously had smallpox."

THE COURT'S OPINION.

"This act, so far as it relates to the same subject matter," Judge Orlady says, "must be read into and construed with the Act of 1911, as a relevant constituent of the School Law. This code is the result of many years of practical experience, and its beneficient provisions should be rigorously enforced, as it is the last expression of the legislative will on this subject."

The judge, in his opinion, discussed both acts at length, together with previous decisions in other cases.

"The exceptions mentioned in the compulsory school attendance act," he says, "refer only to temporary or emergent conditions during such time as he is thereby prevented from attending school on account of health or sanitation laws, or regulations of the local Board of Health or Board of School Directors," and cannot refer to such conditions as is urged by this appellant, to fix a permanent exemption from such attendance, on account of the individual opinion of the parent in regard to his propriety of complying with a health regulation.

"Individual objection to the requirements of the law must give way to the necessity for protection of the public health. Under the facts as presented by this record, the action of the Philadelphia school board was in strict conformity with the law, and the defense interposed by the defendant cannot, under our decisions, justify his refusal to comply with the law."

HOLDS BANK FOR BAD CHECK.

An unusual legal point was decided recently in Common Pleas Court No. 1 of Philadelphia when a bank was held liable for the amount of a worthless check because the bank officials had not notified the depositor "within a reasonable time" of the non-payment of the check. Lawrence J. Dietz & Co., brokers, brought the case against the West End Trust Company.

On July 11, the brokers received a check for $250 from a customer. They deposited the check on July 12. On July 14, 16 and 18, the Clearing House returned the check because the funds had been withdrawn by the issuer. But not until July 20 did the bank notify the brokers. By that time the customer had closed his account and left town.

THE MANUFACTURER'S RIGHT TO FIX PRICES.

Associated Advertising says that those who cling to the thought that when the manufac-

turer sells his product to the retailer, the manufacturer's interest ends, and who, therefore, deny the justice of permitting the manufacturer to fix the resale price, might well weigh this question which a speaker recently asked his audience:

Suppose a retailer had his choice of having the Ivory soap people supply him with a case of unmarked cakes, in plain white wrappers, or having the soap delivered with the trade-mark affixed, as usual,—which soap would he prefer?

The answer is obvious, of course.

Why would the retailer prefer the soap bearing the maker's mark? Isn't it because the manufacturer sells the retailer more than mere *soap?* Isn't it because the maker hands over to the retailer an existing market, along with the goods to satisfy that market?

Isn't it the business of the manufacturer, in the interest of his own business, in the interest of other retailers to whom he is also delivering the existing market along with the soap, and on behalf of the public, to do what he can to keep that market from being destroyed?

The manufacturer could not be expected to stand aside and allow a retailer to change the soap in such a manner as to reduce its usefulness; and must he be compelled to allow that other asset, the existing market, to be injured? Is it not as proper for him to look after the preservation of the one asset as the other?

Most of the sincere opposition to price maintenance legislation has been based either upon the fear that the law would be technically incorrect, or upon fallacious logic. The idea that a manufacturer would fix an unreasonable price, then blow his good money for advertising is too ridiculous to be considered. He would not spend good money making a market for some other fellow to supply!

SPECIAL FORMULA APPROVED FOR DENATURING ALCOHOL FOR TINCTURE OF IODINE.

The following formula, designated as No. 25, has been approved by the Commissioner of Internal Revenue for the special denaturation of alcohol to be used exclusively in the manufacture of the tincture of iodine:

"To every 100 wine gallons, by volume, of ethyl alcohol of not less than 180 degrees proof, there shall be added twenty pounds by weight, of iodine, such alcohol when so denatured to be used exclusively in the manufacture of tincture of iodine, in accordance with the requirements of the United States Pharmacopoeia."

This formula cannot be used in central denaturing bonded warehouses or distillery denaturing bonded warehouses, but the use thereof is authorized for the denaturation of alcohol in central distilling and denaturing plants, the same being one of the two classes of industrial distilleries established under Subsection 2, of Paragraph N of Section 4, act of October 3, 1913, and Supplement No. 2 to Regulations 30.

Permission must be obtained to use a special denaturant in any central distilling and denaturing plant, as provided in Articles 2 and 19 of the supplement.

CHANGES OF ADDRESS.

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or typewritten.

CHANGE OF ADDRESS SINCE NOVEMBER 18, 1916.

HESS, J. L.,
From 2038 Cherry St., Philadelphia, Pa.
To 110 N. Second St., Millville, N. J.

FENDER, W. E.,
From Fort Monroe, Va.
To Camp Hosp., Laredo, Texas.

LAKAMP, W.,
From 1201 Vine St., Cincinnati, Ohio.
To The Georgian Flats, Madison Rd. & Paul, Cincinnati, Ohio.

HOHMANN, GEO.,
From 751 Courtland Ave., New York, N. Y.
To 2480 Concourse St., New York, N. Y.

SPEASE, ED.,
From 89 E. Norwich Ave., Columbus, Ohio.
To 10011 No. Blvd., Cleveland, Ohio.

GADDY, R. L.,
From Dillon, S. C.
To Greenville, S. C.

GIDLEY, WM. F.,
From 220 Sylvia St., W. Lafayette, Ind.
To 123 Russell, W. Lafayette, Ind.

SHNITTER, A.,
From 1230 Boston Rd., New York, N. Y.
To 804 E. 178th St., New York, N. Y.

GROOM, J. I.,
From W. Lafayette, Ind.
To Shelbyville, Ind.

BOXER, B.,
From 1412 Washington Ave., Bronx, New York, N. Y.
To 2023 Washington Ave., Bronx, New York, N. Y.

FASS, S. M.,
From 112 Delencey St., New York, N. Y.
To 1076 Teller Ave., Bronx, New York, N. Y.

SCHLOTTERBECK, J. O.,
From 907 Lincoln Ave., Ann Arbor, Mich.
To c/o Chemical Laboratory, Univ. of Mich., Ann Arbor, Mich.

DECEASED SINCE NOVEMBER 18, 1916.

WILBERT, M. I., Washington, D. C.

BOOK NOTICES AND REVIEWS.

The National Standard Dispensatory. Hobart Amory Hare, B.Sc., M.D., Charles Caspari, Jr., Ph.G., Phar.D., Henry H. Rusby, M.D. Third edition, enlarged and thoroughly revised. Publishers: Lea & Febiger, Philadelphia and New York.

The Ninth Decennial Revision of the Pharmacopoeia of the United States and the recent revisions of the German, French and English Pharmacopoeias necessitated a revised edition of this commentary. The intent of the authors, as set forth in their preface, is to present in this single volume "encyclopaedic information concerning all substances used in pharmacy and medicine at the present day." In the publishers' note the reader is likewise assured that "the aim has been to make the National Standard Dispensatory a reference work of the highest authority upon the entire range of Materia Medica, Pharmacy, and Therapeutics."

These are most laudable purposes, and it is with sincere regret that a critical review from the view-point of a pharmacist, who esteemed the good points of its predecessor The National Dispensatory and always admired the exactness of knowledge pharmaceutical, chemical and pharmacognostical displayed by his teacher and friend the late John M. Maisch, does not permit of the conclusion that these have been attained in the present edition. As this review is purely pharmaceutical no comments, whatever, on the therapeutics are submitted, and it is the hope that, in that respect, the work may well serve the purpose of the authors.

With the possible exceptions of binding, prefatory pages and index, the U. S. P. IX is embodied practically in its entirety in this revised work and even the lists and tables of the Pharmacopoeia are incorporated. One is somewhat at a loss to understand why in a modern work statements of temperature, weight, volume or dimension must be followed by bracketted equivalents; as examples: "25° C. (77° F.)," "10 to 20 grains (0.60 to 1.30 Gm.)," "20 minims (1.3 mils.)," "25 mm. (0.98 In.)," "12 Cm. (5 In.)." Since the official tables of equivalents have been republished in the volume, this appears to be useless.

We note that the pharmacopoeial adoption of "mil" as a distinct noun has not been accepted and throughout it is used as an abbreviation, thus "Mil." and "Mils." The pharmacopoeial chemical formulas are quite frequently not followed and the official order of stating the elements is not observed. It should not be necessary to add after HCN "old style HCY." Specific gravities are generally stated at 15° C. instead of at the temperature officially adopted 25° C.; at times, these are given at both temperatures.

If the use of the metric system of weights and measures is ever to become the common practice in America, the commentaries must cease to transpose official formulas and statements into the denominations of the apothecaries' system. In the volume before us, this has been persisted in throughout and can be viewed only as another discouragement of, and postponement of, the adoption of the metric system.

The treatment of the botanical and pharmacognostical subjects is concise, accurate and commendably practical. Botanical descrip-

tions of drug-yielding plants have been introduced only in the cases of those likely to be met with by the general reader, or when the information is desirable for some special reason. Examples of such exceptions are noted in Baptisia, *Berberis aquifolia* and Cascara Sagrada. Very little space is devoted to descriptions of the histology or to the microscopical characteristics of the powdered drugs. The illustrations are intended to represent the drugs of commerce. In very few instances pictures of sections as appearing under the microscope are presented.

Many of the minor drugs are treated under their botanical classifications, each of the families containing medicinal plants being discussed in a short chapter. Under Labiatae, the authors have followed the plan of the systematic botanist and present a key for the recognition of the medicinal plants of that family. We are at a loss to understand why the genus Ceanothus (family Rhamnaceae) should be discussed under Krameria.

Some of the mistakes that have crept into the volume may be attributed to the desire to complete the publication at an early date and the acceptance of "advance information" instead of awaiting the positive knowledge obtainable only from the published revisions of the U. S. P. and the N. F. Diluted Metaphosphoric Acid is attributed to the N. F. although deleted from that work. The transfer of Vanilla to the N. F. is not noted and Arnica Root, Cetraria and Thea are wrongly credited to the N. F. The transfer of Conium from the U. S. P. to the N. F. is recognized in the title, but the assay process of the U. S. P. VIII is given instead of the present legal method of the N. F. IV. The statement is made that the N. F. requirement for Rennin is that "it should be capable of coagulating not less than 12,500 times its weight of normal fresh cow's milk," which is just one-half of the N. F. standard.

It is in the pharmacy and chemistry of the volume that we are compelled to note much that is faulty. The errors of omission and commission are too numerous to enumerate in detail within the limits of this review, and these are very largely traceable to the unexplainable ignoring of the fourth edition of the National Formulary. Since twenty-nine pages have been devoted to the consideration of the Federal Food and Drugs Act of June 30, 1906, the Rules and Regulations for its enforcement and the Food Inspection Decisions thereunder, the authors cannot be unaware of the fact that Sections 6 and 7 of that Act specifically name the National Formulary as one of the two legal authorities of equal standing for prescribing the standards for drugs.

The United States Pharmacopoeia IX fully recognizes the equal authority of the National Formulary under the law. A drug or a preparation transferred from the U. S. P. to the N. F. must comply with the latter authority and changes made in the standard or formula must be complied with. It is surprising to note the numerous instances where the revised National Standard Dispensatory has failed to recognize this principle and the changes made.

Acetum Aromaticum N. F. is ignored and the formula of the German Pharmacopoeia is given. *Acetum Opii* N. F. is not mentioned. *Acidum Formicicum* of the German Pharmacopoeia is described and its tests translated, but the legal standard of the N. F. for *Acidum Formicum* and for the spirit of same is ignored. For Acetic Ether the definition of the British Pharmacopoeia and the tests laid down in the German and British Pharmacopoeias are given and the legal standard and tests for identity and purity laid down in the N. F. is not referred to. Bromauric Acid and Ammonium Hypophosphite and Calcium Lactophosphate, all N. F., are nowhere mentioned. The Aluminum Chloride and Aluminum Sulphate described are not the legal standards of the N. F. The Ammonium Phosphate described is not that standardized in the N. F. While Antimony Oxide N. F. is the title, the tests and assay of the N. F. are omitted. *Antimonii Sulphuratum* is the British Pharmacopoeia standard and not the N. F. The standard stated for Bromine varies from that of the N. F.

That Cataplasm of Kaolin and Cerate of Lead Subacetate are now N. F. formulas and that changes have been made in these appear not to have been observed. For Confection of Rose and Confection of Senna, the formulas of the British Pharmacopoeia are given and not the legal formulas of the N. F. despite the fact that these formulas were transferred from the U. S. P. and that the latter varies in composition from that of the British Pharmacopoeia.

The National Formulary contains formulas for nearly eighty elixirs, many of which are

exceedingly popular and daily prescribed and some of these assuredly deserve some consideration in an encyclopedic commentary on "substances used in pharmacy and medicine at the present day." Only three elixirs are considered under these titles, namely, the U. S. P. Aromatic Elixir and Elixir Glycyrrhizae and the German pharmacopoeial formula for Compound Elixir of Bitter Orange. In the latter, no reference is made to the fact that the N. F. has a formula under this title and varying somewhat from that of the German.

The Emplastra, Emulsa and Extracta of the N. F. receive no better treatment than that accorded the elixirs.

The National Formulary IV supplies the legal standards for ninety fluidextracts, thirty-one of these titles having been transferred from the U. S. P. VIII. Of this entire group, only a few are even incidentally mentioned. It is certainly more important to place before the reader and student, either medical or pharmaceutical, information concerning the legal standards for fluidextracts used in American practice, such as those of Berberis, Cotton Root, Echinacea, Valerian, Zea, etc., than to present formulas from the foreign pharmacopoeias that are little known or used here, such as the fluidextracts of Belae and Picrorhizae. It is misleading to give the formulas of the German, French and Swiss pharmacopoeias for Fluidextract of Condurango and not mention that the N. F. supplies the official American standard and that this legal formula directs a different menstruum.

The fact that the N. F. has supplied legal standards for Saccharated Iron Oxide, Iron Glycerophosphate, Iron Hypophosphite, Iron Lactate, Iron Pyrophosphate, Lithium Salicylate, Manganese Citrate Soluble, Manganese Sulphate, Oils of Orange Flower, Bitter Orange, Bergamot, and Sherry Wine, is overlooked along with a host of similar oversights. We are pleased to note that N. F. is added to the title of Oil of Bay, but for some reason the statements of the physical characters of the N. F. are deviated from. The Swiss Pharmacopoeia is quoted in Empyreumatic Oil of Birch and the legal standard for Rectified Oil of Birch Tar N. F. is ignored.

We find the British formulas for glycerites of alum and borax, but one looks in vain for the formula for Glycerite of Bismuth N. F. The Glycerite of Pepsin of the Br. P. has first place although the text admits that the N. F. preparation is "slightly stronger in digestive power."

Antiseptic Solution, Alkaline Antiseptic Solution, Dobell's Solution, Clemen's Arsenic Solution, Solution of Gold and Arsenic Bromides, all popular N. F. formulas are omitted.

The statement that the N. F. directs that infused oils be made with "a mixture of lard oil and cotton seed oil" is incorrect as the N. F. now directs sesame oil for that purpose.

In the Tinctures, we find that very few of the N. F. titles are mentioned and as a result such tinctures as Bryonia, Cactus Grandiflora, Capsicum and Myrrh, Cocculus Indicus, Larkspur, Ferri Citro-Chloride, Ignatia, etc., are not discussed and important information that should be presented on nearly fifty, more or less used preparations of this important class of galenicals, is omitted.

The treatment of the other important groups of preparations such as Pills, Syrups, Wines, Troches and Ointments, is similar to that accorded to the fluidextracts and tinctures.

Presumably, this dispensatory was prepared for the use and guidance of American practitioners and not especially for those of foreign lands. Yet, singularly, its abstracts and comments on the formulas and standards of the foreign pharmacopoeias are, as a rule, quite accurate, while, as necessarily pointed out, its ignoring, at times, of American standards and its numerous inaccuracies in the statements regarding these must detract very materially from its value. The value of such commentaries depends entirely on the correctness of the information they attempt to impart. If the information is erroneous or misleading, as occurs in many instances in the present volume, it becomes not only a misleading guide, but also one that would prove dangerous because of the fallacies in the practice of pharmacy and the false standards it may inculcate. Another revision of this third edition should be promptly made so as to correct the numerous errors, types of which have been pointed out.

G. M. B.

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